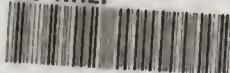


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ALLOWANCE OF ARTICLES  
UNDER COGNIZANCE OF THE  
BUREAU OF EQUIPMENT AND RECRUITING  
FOR  
VESSELS OF THE UNITED STATES NAVY.  
—  
1890.

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# ALLOWANCE OF EQUIPMENT

UNDER COGNIZANCE OF THE

## BUREAU OF EQUIPMENT AND RECRUITING

FOR VESSELS OF THE

## UNITED STATES NAVY.

# 1890.

---

ISSUED BY THE NAVY DEPARTMENT.

---



WASHINGTON:  
GOVERNMENT PRINTING OFFICE.  
1890.

VC 273  
A3  
1890



NAVY DEPARTMENT,  
*Washington, January 1, 1890.*

The following Allowance of Equipment, under cognizance of the Bureau of Equipment and Recruiting, for vessels of the United States Navy, are approved, and officers of the Navy will be governed thereby.

B. F. TRACY,  
*Secretary of the Navy.*

( 3 )

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( 5 )



*Classification of Vessels for Equipment under cognizance of the Bureau of Equipment and Recruiting.*

Name and class.	Displacement.	Rig.
FIRST CLASS.		
Chicago .....	4,500	Bark.
Philadelphia .....	4,324	3-masted schooner.
Newark .....	4,083	Bark.
San Francisco .....	4,083	3-masted schooner.
.....		
.....		
.....		
.....		
.....		
.....		
.....		
SECOND CLASS.		
<i>No sail power.</i>		
Baltimore .....	4,400	Two military masts.
Charleston .....	3,730	" " "
.....		
.....		
.....		
.....		
.....		
.....		
THIRD CLASS.		
Lancaster .....	3,250	Ship.
Brooklyn .....	3,000	"
Pensacola .....	3,000	"
Hartford .....	2,900	"
Richmond .....	2,700	"
.....		
.....		
.....		
.....		

*Classification of Vessels for Equipment under cognizance of the Bureau of Equipment, &c.—Continued.*

Name and class.	Displacement.	Rig.
FOURTH CLASS.		
Boston .....	3,000	Brig.
Atlanta .....	3,000	
No. 7 .....	3,000	Schooner.
Nos. 8 .....	3,000	
.....		
.....		
.....		
.....		
FIFTH CLASS.		
Omaha .....	2,400	Bark.
Galena .....	1,900	"
Marion .....	1,900	"
Mohican .....	1,900	"
Ossipee .....	1,900	"
Swatara .....	1,900	"
.....		
.....		
.....		
.....		
.....		
.....		
SIXTH CLASS.		
Iroquois .....	1,575	Bark.
Kearsarge .....	1,550	"
Adams .....	1,375	"
Alliance .....	1,375	"
.....		
.....		
.....		
.....		

*Classification of vessels for equipment under cognizance of the Bureau of Equipment, &c.—Continued.*

Name and class.	Displacement.	Rig.
SIXTH CLASS—Continued.		
Essex .....	1,375	Bark.
Enterprise .....	1,375	"
Nipsic .....	1,375	"
.....		
.....		
SEVENTH CLASS.		
No. 9 .....	2,000	Schooner.
No. 10 .....	2,000	"
No. 11 and class .....	2,000	"
Yorktown .....	1,703	3-masted schooner.
Concord .....	1,703	" "
Bennington.....	1,703	" "
Dolphin .....	1,485	" "
.....		
.....		
EIGHTH CLASS.		
Alert .....	1,020	Bark.
Ranger .....	1,020	"
Yantic .....	900	"
Petrel and class.....	885	Barkentine.
.....		
.....		
.....		
.....		
.....		
NINTH CLASS.		
Despatch .....	560	Brigantine.
Nina.....	420	Schooner.
Mayflower .....	420	"
Leyden .....	420	"
Fortune.....	420	"

*Classification of vessels for equipment under cognizance of the Bureau of Equipment, &c.—Continued.*

Name and class.	Displacement.	Rig.
NINTH CLASS—Continued.		
Palos .....	420	Schooner.
Pinta .....	420	"
Speedwell .....	420	"
Standish .....	420	"
Triana .....	420	"
Triton .....	70	
.....		
.....		
.....		
.....		
.....		
.....		
.....		
IRON-CLADS.		
FIRST CLASS.		
Maine .....	6,618	3-masted schooner.
Texas .....	6,300	2 military masts.
Puritan .....	6,000	1 military mast.
Amphitrite .....	3,815	1 " "
Miantonomoh .....	3,815	1 " "
Monadnock .....	3,815	1 " "
Terror .....	3,815	1 " "
.....		
.....		
.....		
.....		
.....		
SECOND CLASS.		
Ajax .....	2,100	
Camanche .....	1,875	
Canonicus .....	2,100	
Catskill .....	1,875	
Jason .....	1,875	
Lehigh .....	1,875	
Mahopac .....	2,100	
Manhattan .....	2,100	
Montauk .....	1,875	



*Classification of vessels for equipment under cognizance of the Bureau of Equipment, &c.—Continued.*

Name and class.	Displacement.	Rig.
IRON-CLADS—Continued.		
SECOND CLASS—Continued.		
Nahant.....	1,875	
Nantucket .....	1,875	
Passaic .....	1,875	
Wyandotte.....	2,100	
.....		
.....		
.....		
.....		
.....		
.....		
.....		
PADDLE-WHEEL STEAMERS.		
Monecacy.....	1,370	Schooner.
Tallapoosa .....	1,270	"
Michigan.....	685	Barkentine.
.....		
.....		
.....		
.....		
.....		
.....		
.....		
SAILING VESSELS.		
Constellation.....	1,886	Ship.
Portsmouth .....	1,125	"
Jamestown.....	1,150	"
.....		
.....		
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.....		

NOTE.—Receiving-vessels, hulks, and store-ships will be supplied by the Bureau on special requisitions.



## EQUIPMENT.

### ANCHORS AND KEDGES.

1. Bower and sheet anchors are to be alike in weight, the weight of an anchor or kedge, *as marked on it*, being inclusive of the bending-shackle and stock.

2. Stream anchors, in all cases, when allowed, are to be about one-fourth the weight of the bower.

3. Kedges, when four are allowed, are to be, respectively, about one-seventh, one-eighth, one-tenth, and one-fourteenth the weight of the bower; when three are allowed, one-sixth, one-eighth, and one-tenth; when two are allowed, one-sixth and one-tenth; and when one is allowed, one-eighth.

4. To determine the weight of a bower or sheet anchor for a vessel, multiply her displacement in tons by the number assigned to her approximate displacement in the following table, in the column headed "Multipliers," and the product will express the number of pounds, *inclusive of stock*.

5. Each boat of every vessel is allowed one anchor; the weight in pounds to be obtained by multiplying the square of the extreme breadth by 1.2.

TABLE I.—*Anchors and kedges.*

Size of vessel.	Multipliers.	Bower.	Sheet.	Stream.	Kedges.
Over 3,700 tons displacement .....	1 $\frac{3}{4}$	2	2	1	4
Over 2,400 tons displacement.....	2	2	2	1	3
Over 1,900 tons displacement .....	2 $\frac{1}{4}$	2	2	1	3
Over 1,500 tons displacement .....	2 $\frac{1}{2}$	2	2	1	3
Over 900 tons displacement.....	2 $\frac{3}{4}$	2	1	1	3
900 tons and under displacement.....	3	2	1	1	2
Vessels with no sail power.....	1 $\frac{1}{2}$	2	1	.....	2

Patent or other anchors will be supplied by special order.

## EQUIPMENT—Continued.

## CHAIN-CABLES, ETC.

*Rule to determine the size of chain-cable corresponding to an anchor of a given weight (inclusive of stock).*

Cut off the two right-hand figures of the number of pounds of the anchor's weight, and multiply the square root of the remaining quantity by 4; the result will be the diameter of the chain in sixteenths of inches. Thus:

Weight of anchor in pounds ..... 5,000  
 Cut off two right-hand ciphers, leaves ..... 50  
 Square root of 50 ..... 7.071  
 $7.071 \times 4 = 28.284$  and  $\frac{28}{16} = 1\frac{7}{8}$ , the diameter of chain needed.

TABLE II.—*Length of chain-cables.*

Weight of bower-anchor, in pounds, including stock.	Length of chains in fathoms.			Remarks.
	Bower.	Sheet.	Stream.	
Over 7,500 .....	135	135	105	One chain-cable, length and size as indicated by table and rule above, is to go with each bower, sheet, and stream anchor allowed the vessel; except vessels of special types, when special lengths shall be allowed.
Over 5,000 .....	120	120	105	
Over 3,000 .....	120	120	90	
Over 2,000 .....	120	120	90	
Over 1,600 .....	105	105	75	
Over 1,200 .....	90	90	75	
Over 800 .....	90	90	60	
Under 800 .....	60	60	60	

TABLE III.—*Chain-cables for boats.*

When number of boats allowed is—	Length of chain and number allowed.		Remarks.
	Of 30 fathoms.	Of 25 fathoms.	
More than 7 .....	2	2	The size of these chains is to be determined by rule above. If the anchor is of less weight than 100 pounds, take $\frac{1}{16}$ of it for number of sixteenths for chain.
More than 5 .....	1	2	
More than 3 .....	0	2	
Less than 3 .....	0	1	

## EQUIPMENT—Continued.

TABLE IV.—*Appendages to chain-cables.*

The articles, as per columns 1, 2, 3, 4, 5, and 6, are to be furnished with each chain-cable a vessel is allowed, to correspond thereto; and those articles in columns 2, 3, 4, 5, and 6 are to be delivered in a suitable box, indorsed with its contents and the size of the cable to which they pertain.

When the size of the cable is—	Chain-hooks.	Cold-chisels.	Punches.	Pins.	Spare shackles.	Keys for shackle-pins.	Spare bending-shackle and club-link.	Mooring-swivels.
Column .....	1.	2.	3.	4.	5.	6.		
Over 2 inches .....	20	8	8	12	2	1	One to each vessel.	One for each vessel whose bower chain-cables are of and over $\frac{1}{6}$ of an inch.
Over $1\frac{1}{8}$ inches .....	18	6	6	10	2	1		
Over $1\frac{5}{16}$ inches .....	16	4	4	8	2	1		
Over $1\frac{1}{4}$ inches .....	12	4	4	8	2	1		
Over $\frac{1}{2}$ inch .....	8	4	4	6	2	1		
Over $\frac{3}{8}$ inch .....	8	3	3	6	2	1		
Under $\frac{1}{8}$ inch .....	6	3	3	6	2	1		

NOTE.—Three deck-stoppers for each cable, one bitt-stopper for each bower.

TABLE V.—*Grappels and iron buoys.*

When the weight of the bower anchor (including stock) is in pounds—	Grappels.		Grappels for buoys.		Buoys for anchors.			
	Number.	Weight, in pounds.	Number.	Weight of each, in pounds.	Number.	Height, in inches.	Breadth, in inches.	Weight, in pounds.
Over 7,500 .....	2	140 and 70	2	15	2	44	21	60
Over 5,000 .....	2	100 and 50	2	15	2	44	21	60
Over 3,000 .....	2	80 and 40	2	12	2	44	21	60
Over 2,000 .....	2	60 and 30	2	12	2	44	21	60
Over 1,600 .....	2	50 and 25	2	10	2	30	$13\frac{1}{2}$	30
Over 1,200 .....	2	40 and 20	2	10	2	30	$13\frac{1}{2}$	30
Over 800 .....	2	30 and 15	1	10	2	30	$13\frac{1}{2}$	30
Under 800 .....	1	25	—	—	2	30	$13\frac{1}{2}$	30

## EQUIPMENT—Continued.

TABLE VI.—*Stream-cables of manila, hawsers, and tow-lines.*

The number and circumference, in inches, of wire and manilla hawsers and manilla tow-lines, to be furnished to a vessel in the Navy according to the weight of her bower-anchor. Each manilla hawser and tow-line is to be 120 fathoms in length; wire hawsers 100 fathoms in length. All hawsers should be kept on reels, and none stowed in the hold if it can possibly be avoided.

Weight of bower-anchor, including stock.	Hawsers of manilla, number allowed having a circum- ference of—				Tow-lines of manilla, number al- lowed hav- ing a cir- cumference of—	Steel-wire hawsers, number allowed having a circum- ference of—				
Pounds.	6 inches, rope-laid.	7 inches, rope-laid.	8 inches, rope-laid.	9 inches.	5 inches.	3½ inches.	4 inches.	4½ inches.	4¾ inches.	5 inches.
10,000	.....	1	1	1	2	.....	1	.....	1	1
9,500	.....	1	1	1	2	.....	1	.....	1	1
9,000	.....	1	1	1	2	.....	1	.....	1	1
8,500	.....	1	1	1	2	.....	1	.....	1	1
8,000	.....	1	1	1	2	1	1	.....		
7,500	.....	1	1	1	2	1	1	.....	1	.....
7,000	.....	1	1	1	2	1	1	.....	1	.....
6,500	.....	1	1	1	2	1	1	.....	1	.....
6,000	.....	2	1	.....	2	1	1	.....	1	.....
5,500	.....	2	1	.....	2	1	1	.....	1	.....
5,000	1	1	1	.....	2	1	1	.....	1	.....
4,500	1	1	1	.....	2	1	.....	1	.....	.....
4,000	1	1	1	.....	2	1	.....	1	.....	.....
3,500	1	1	.....	.....	2	1	.....	1	.....	.....
3,000	1	1	.....	.....	2	1	.....	1	.....	.....
2,500	1	.....	.....	.....	2	1	1	.....	.....	.....
2,000	1	.....	.....	.....	2	1	1	.....	.....	.....



## EQUIPMENT—Continued.

VII.—Table of comparative dimensions of chain-cables, hemp rope, iron and steel rope, their weight per fathom, and breaking-strain.

Breaking-strain of wire and hemp ropes.	Approximate size of chains corresponding thereto.	Circumference.			Weight per fathom.					Size of wire used in rope (iron and steel.)		Remarks.
		Hemp rope.	Iron-wire rope.	Steel-wire rope.	Chain.	Hemp rope, tarred.	Hemp rope, not tarred.	Iron-wire rope.	Steel-wire rope.	Circumference of rope.	Number of wire.	
Pounds.	Inches.	In.	In.	In.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	In.	B. W. G.	
4,880	$\frac{1}{8}$	$2\frac{1}{2}$	$1\frac{1}{4}$	$\frac{7}{8}$	5.18	1.48	1.25	1.28	-----	$\frac{1}{4}$	22	Steel and iron wire rope, in accordance with this table, have a hemp heart.
7,040	$\frac{1}{8}$ full.	3	$1\frac{1}{2}$	$1\frac{1}{8}$	-----	2.12	1.77	1.72	-----	$\frac{1}{2}$	21	
8,260	$\frac{3}{8}$ scant.	$3\frac{1}{8}$	$1\frac{5}{8}$	$1\frac{1}{8}$	-----	2.46	1.87	2.12	-----	$1\frac{5}{8}$	21 full.	
9,580	$\frac{3}{8}$	$3\frac{1}{4}$	$1\frac{3}{4}$	$1\frac{1}{4}$	7.70	2.66	2.03	2.49	1.29	$1\frac{3}{4}$	20	The sizes of the wire given are those in use at the Government rope-walk at the navy-yard, Boston, Mass.
11,000	$\frac{3}{8}$ full.	$3\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{3}{8}$	-----	2.76	2.30	3.06	1.60	$1\frac{7}{8}$	20 full.	
12,520	$\frac{7}{16}$	4	2	$1\frac{1}{2}$	11.11	3.72	3.09	3.22	1.74	2	19	
14,130	$\frac{7}{16}$ full.	$4\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{5}{8}$	-----	4.67	3.89	3.65	2.14	$2\frac{1}{8}$	19 full.	No data for the weight of steel ropes smaller than $1\frac{1}{4}$ -inch.
15,840	$\frac{1}{2}$	$4\frac{3}{4}$	$2\frac{1}{4}$	$1\frac{3}{4}$	14.08	5.69	4.33	4.15	2.51	$2\frac{1}{4}$	18	
19,560	$\frac{9}{16}$	$5\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{7}{8}$	18.64	6.94	5.29	5.27	3.09	$2\frac{1}{2}$	18 full.	
23,660	$\frac{5}{8}$	$5\frac{3}{4}$	$2\frac{3}{4}$	2	22.20	8.33	6.35	6.31	3.25	$2\frac{3}{4}$	17	Proof-strains to be as nearly as possible one-half the breaking-strain.
28,160	$\frac{1}{2}$	$6\frac{1}{2}$	3	$2\frac{1}{8}$	25.81	9.66	8.05	7.46	3.68	3	16	
33,050	$\frac{3}{4}$	$7\frac{1}{4}$	$3\frac{3}{4}$	$2\frac{1}{4}$	30.31	12.78	10.09	8.97	4.19	$3\frac{3}{4}$	16 full.	
38,330	$\frac{3}{4}$ full.	$7\frac{3}{4}$	$3\frac{1}{2}$	$2\frac{1}{2}$	-----	14.35	11.52	10.69	5.32	$3\frac{1}{2}$	15	In practice it is advisable to take it at $\frac{2}{3}$ of the average breaking-strain.
44,000	$\frac{1}{2}$	8	$3\frac{3}{4}$	$2\frac{5}{8}$	37.73	14.65	12.21	12.72	5.97	$3\frac{3}{4}$	14	
50,060	$\frac{7}{8}$	$8\frac{1}{2}$	4	$2\frac{3}{4}$	41.71	16.57	13.80	14.81	6.37	4	14 full.	
56,520	$\frac{1}{2}$	9	$4\frac{1}{4}$	$3\frac{3}{8}$	47.81	18.48	15.48	16.71	8.35	$4\frac{1}{4}$	13	
63,360	1	$9\frac{1}{2}$	$4\frac{1}{2}$	$3\frac{1}{4}$	55.16	20.71	17.25	18.95	9.05	$4\frac{1}{2}$	13 full.	
70,580	$1\frac{1}{16}$	$10\frac{1}{4}$	$4\frac{3}{4}$	$3\frac{3}{8}$	66.44	25.83	19.68	21.40	10.02	$4\frac{3}{4}$	12	
78,220	$1\frac{1}{8}$	11	5	$3\frac{1}{2}$	75.27	27.82	23.20	24.20	10.79	5	12 full.	
86,240	$1\frac{1}{8}$	$11\frac{1}{4}$	$5\frac{1}{4}$	$3\frac{3}{4}$	83.64	30.57	24.29	27.15	12.84	$5\frac{1}{4}$	11	
94,650	$1\frac{1}{8}$ full.	$11\frac{3}{4}$	$5\frac{1}{2}$	4	90.40	33.54	26.50	30.52	14.95	$5\frac{1}{2}$	11 full.	
103,450	$1\frac{1}{4}$	$12\frac{1}{4}$	$5\frac{3}{4}$	$4\frac{1}{4}$	-----	36.40	28.80	33.95	16.87	$5\frac{3}{4}$	10	
112,640	$1\frac{1}{8}$	$13\frac{1}{2}$	6	$4\frac{3}{8}$	102.22	44.17	34.99	37.70	18.10	6	10 full.	
122,220	$1\frac{3}{8}$	15	$6\frac{1}{4}$	$4\frac{1}{2}$	112.27	54.72	43.20	41.65	19.13	$6\frac{1}{4}$		
132,200	$1\frac{1}{8}$	$15\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{3}{4}$	120.84	58.27	46.12	45.90	21.61	$6\frac{1}{2}$	9 full.	
142,560	$1\frac{1}{8}$ full.	16	$6\frac{3}{4}$	5	130.69	61.84	49.15	52.50	24.44	$6\frac{3}{4}$	8	
153,320	$1\frac{1}{2}$	$16\frac{1}{2}$	7	$5\frac{1}{4}$	-----	66.03	52.27	56.89	27.42	7	8 full.	

NOTE.—Column 1 is not a standard of strength of cables. Column 2 is intended to give, as nearly as possible, the size of chains approximating in strength to certain given sizes of wire and hemp rope. Weight of wrought-iron per cubic inch = .2816 lb.

## EQUIPMENT—Continued.

VIII.—Data concerning chain-cables, from tests at the Washington navy-yard, during the time of the session of the Wire Board, from iron rolled by the Government, and from iron received under the standard Government test for the same.

Diameter of chain iron.	Average breaking-strain.	Weight per fathom.
Inches.	Pounds.	Pounds.
$\frac{1}{8}$ .....	4,087	3.35
$\frac{7}{16}$ .....	6,343*	5.18
$\frac{1}{2}$ .....	9,300	7.70
$\frac{5}{8}$ .....	12,620*	11.11
$\frac{3}{4}$ .....	16,550	14.08
$\frac{7}{8}$ .....	21,100*	18.64
$\frac{15}{16}$ .....	26,100	22.20
$1\frac{1}{16}$ .....	31,660*	25.81
$1\frac{1}{8}$ .....	37,580	30.31
$1\frac{1}{4}$ .....	44,130*	37.73
$1\frac{3}{8}$ .....	51,090	41.71
$1\frac{1}{2}$ .....	58,480*	47.81
1 .....	67,000	55.16
$1\frac{1}{16}$ .....	71,993	66.44
$1\frac{1}{8}$ .....	81,000	75.27
$1\frac{3}{16}$ .....	89,844	83.64
$1\frac{1}{4}$ .....	112,430	90.40
$1\frac{5}{16}$ .....	120,000	102.22
$1\frac{3}{8}$ .....	124,000	112.27
$1\frac{7}{16}$ .....	136,750	120.84
$1\frac{1}{2}$ .....	157,750	130.69
$1\frac{9}{16}$ .....	164,871	144.59
$1\frac{5}{8}$ .....	171,600	154.30
$1\frac{11}{16}$ .....	177,500	167.16
$1\frac{3}{4}$ .....	217,840	176.98
$1\frac{7}{8}$ .....	224,000	189.75
$1\frac{9}{8}$ .....	239,874*	223.47
2 .....	255,600	234.48
$2\frac{1}{8}$ .....	288,548*	263.40
$2\frac{1}{4}$ .....	.....	272
$2\frac{1}{2}$ .....	.....	306
$2\frac{3}{8}$ .....	.....	336

Wire rope, in Table VII, is made at the Boston navy-yard, has a hemp heart, and is laid up right-handed. As an approximate rule, multiplying the square of the circumference of a hemp rope by the decimal .223 for iron wire, and by .12 for steel wire, and extracting the square root of the product, will give the circumference of a wire rope of corresponding strength—that is, a wire rope with a hemp heart; and multiplying the square of the circumference of a hemp-heart wire rope by 4.5 for iron wire, and by 8.4 for steel wire, and extracting the square root of the product, will give at the circumference of a hemp rope of corresponding strength.

## EQUIPMENT—Continued.

## STANDING AND RUNNING RIGGING.

Length of rigging of all kinds is to be determined by an accurate draft of the vessel to be rigged. For sizes, see tables following.

All standing rigging to be 6-stranded, shroud-laid, galvanized-wire rope; to be wormed, parceled, and served from end to end as a protection against wear and tear, except stays on which sail is carried; to be set up with rigging-screws except topmast rigging, which is to be set up with laniards—upper dead-eyes to be strapped with iron and have a galvanized-iron scored heart (Walton's) at the upper part of the strap. Topmast rigging of fore-and-aft-rigged vessels may be set up on end. Futtock shrouds are to be made of iron rods set up with turn-buckles to the mast, and shackled to top plate.

## LOWER RIGGING.

Wire rope for standing rigging is to be thoroughly protected from air and water by painting it with red lead mixed with boiled linseed oil, wormed, parceled with cotton sheeting (which should be painted when on), then served the entire length.

Get the rope on a stretch and measure off the extreme length of each pair of shrouds from the draft. The middle of the length thus determined will be the center of the eye; paint, worm, parcel, paint again, and serve throughout. Then measure off from the center of eye on each leg of a pair of shrouds the required distance, or place, for the eye-seizing. The eye and both legs to two feet below the eye-seizing should be double-served, first parceling with tarred flax, parceling and serving with round-line. Then over this double service, to a distance of one foot below the place marked for the eye-seizing, put on the heading, which consists of tarred flax canvas, marled on with spun-yarn, the marling hitches to be on top. In putting on this heading, commence on each leg below the place marked for the eye-seizing and work towards the center of the eye. When this is done, form the eye and put on the seizing, which is to be covered with tarred flax canvas securely marled on. After the shroud is let down and the eye formed, cut it to the length marked, and so continue until the rigging is all fitted for each mast. The shroud is then ready for turning in. To determine the place for eye-seizings, of No. 1 pair of shrouds, measure off from the center of the eye two and one-half squares of the mast-head on each leg, and mark it for the upper turn of the seizing. The place of seizing for No. 2 to be the same distance, *plus* the diameter of the shroud; for No. 3 the same distance, *plus* twice the diameter, and so on for the others. Both legs of Nos. 1 and 2 will be leathered in the wake of the yard to take the chafe of the lower yards when braced up.

When the rope is first got on a stretch and the first pair of shrouds is measured off, continue the fitting as far beyond the cut-mark (on the legs of the second pair) as the stretch will admit of.

When there is an odd shroud in the fore and main rigging it should be the after shroud; the eye spliced the same length the heading would be, and seized above the crotch of the splice, making the eye the same as if it were a pair of shrouds, and fitted the same as Nos. 3 and 4. If there is an odd shroud in the mizzen rigging it is to be fitted straight (one leg on the starboard and the other on the port side) and spanned with the pendant, forming the mast-head, and should be put over the mast-head first, the same as the pendants are put over the fore or main mast-head.

## TOPMAST RIGGING

Is to be fitted in the manner known as "*straight*," with one eye formed out of two pairs of shrouds, which gives two lifts or thicknesses on the mast-head, with four shrouds on each side, making a snug and neat mast-head.

It should be painted, wormed, parceled, painted again, and served the entire length. The shrouds will be double served from center of eye to three or four feet below the futtock-staff. The length of heading from center of eye down to one foot below the eye-seizing is put on the same as the lower rigging. Catharpins are to be of wire rope, wormed, painted, and parceled, and double served throughout; to be fitted with eyes in each end, and should go abaft the mast and seize together in the center.



The topmast-head (Burton) pendants will be wire rope, fitted the same as lower pendants. Each top-mast has four pendants, two forward and two abaft the rigging. The lower ends of pendants to hang six inches below the catharpin-legs.

Pendants to be fitted the same as topmast rigging, without double service, except around their thimbles.

Sword mats will be substituted for double service on the swifters of lower and topmast rigging.

#### TOPGALLANT RIGGING

Is to be painted, wormed, parceled, painted again, and served the entire length; to go over the funnel on the mast-head. To be fitted in pairs, with eyes formed like the eyes of lower rigging, and seized so as to fit snug over the funnel.

The forward legs to be double served from the center of eye to one foot below the futtock-staff of topmast rigging; the after leg to be double served from center of eye, three feet down; then from a point one foot above cross-trees to one foot below the futtock-staff; both legs to be leathered in the wake of cross-trees, and to set up in the top with dead-eyes.

#### FORE AND MAIN STAYS.

Are to be fitted separate, with split collars and lashing-eyes, painted, wormed, parceled, painted again, and served the entire length. Double service on ends of fore-stays, commencing from lower part of the end, quarter-seizing around the thimble and up eight feet on the standing parts. *Main stays*, double service around the thimbles, up to lower part of quarter-seizings, on the end and standing parts. The lashing-eyes to be double served before splicing, which does away with outside parceling and hitching.

Collars to be seized together in the loft and leathered down to four feet below the crotch. To be set up with rigging-screws. Lower end of stay to be spliced around thimble where sail is carried.

Chains may be substituted for wire on the main, in the wake of the smoke-stack, when needed.

#### MIZZEN STAYS.

Single service throughout; collars to be fitted the same as fore and main; double service around the thimble. Lower end to be set up with rigging-screws.

#### FORE-TOPMAST STAYS

Are to be single; to be set up with rigging-screws; lower end fitted same as lower stay.

#### MAIN-TOPMAST STAYS.

Fitted the same as the fore-topmast stays; in long ships, with great distances between fore and main masts, they may be brought directly to the deck near the foremast; but in short ships they will pass through chocks between fore trestle-trees, and set up on deck with rigging-screws. Nips to be double served and leathered; collars seized together in the loft.

#### MIZZEN-TOPMAST STAYS.

Fitted the same as main-topmast stays, and set up in the main-top with three-scored hearts.

#### FORE-TOPGALLANT STAYS.

Painted, wormed, parceled, painted again, and served the entire length; to be double served on the eyes around the funnels, and from twelve feet above to one foot below the jib-boom; also in the wake of the nip of the clamp on the dolphin-striker, and where they reeve through the bees. All nips to be leathered. Stays to be set up with rigging-screws, lower end spliced around thimble.

## MAIN-TOPGALLANT STAYS.

To be fitted the same as the fore, and set up with dead-eyes in the fore-top. To be double served and leathered at the hole in the fore-cap through which they lead; also to be leathered about three feet below the crotch of the eye-splice.

## MIZZEN-TOPGALLANT STAYS.

Fitted, served, leathered, and led in the same manner as the main, and set up in the main-top.

## FORE AND MAIN TOPMAST BACKSTAYS.

Fitted and measured off the same as the after-shrouds of the fore and main rigging.

## MIZZEN-TOPMAST BACKSTAYS

Are fitted with horseshoe eyes.

## FORE, MAIN, AND MIZZEN TOPGALLANT BACKSTAYS.

To be painted, wormed, parceled, painted again, and served throughout. Fitted with spliced eyes, which are double served, without outside parcelling.

## BOAT-DAVIT TOPPING-LIFTS, SPANS, AND GUYS.

To be of wire rope, and served throughout. Spans to which topping-lift pendants are attached to be leathered in the middle. Topping-lifts not to be served.

## RULE

For finding the size of the fore and main shrouds, based on the area, in square feet, of the mainsail, topsail, and topgallant sail.

Rankin, in his work, gives a rule for finding the direct pressure of wind, in pounds, on the sails—that is, when it strikes them at right angles, as follows: “Divide the square of the velocity of the wind in knots by 150 for the direct impulse on a flat surface in pounds on the square foot.” Assuming the velocity of wind in a storm to be 53 miles per hour, and applying this rule of Rankin, the pressure on the sails will be found to be 19 pounds per square foot of surface. Bracing the lower yards at an angle of  $35^\circ$  with the keel, the wind strikes the sails at an angle of  $55^\circ$ . A simple calculation shows that at this angle the pressure is reduced to 15.6 pounds per square foot. Therefore, multiply the area of these sails by 15.6 and the actual angular force exerted will be the result; and this will be the support in pounds required for the mast. Now find the angle of support, or the angle which the shrouds make with the mast. A convenient method is to take a line from a lower dead-eye abreast the mast and carry it to the center of the mast horizontally, so as to form a right-angle with it, and measure its length in feet. Then measure from this point on the mast the distance to the upper side of the trestle-trees. Now divide the length of the line taken from the dead-eye by the above measurement on the mast, and the result will be the tangent of the angle of support. Then to the log. cosec. of the angle of support add the log. of the angular force, and the result will be the power of support required in pounds *for that angle*; but for greater security add one-half of this amount to it, and the result will be the total power of support desired. Divide the total power of support thus obtained by the number of shrouds proposed for one side; the quotient will be the breaking-strain of a single shroud, which seek in the table of strength for the required size.

In fore and aft rigged vessels, the sail area used in the computation will be that of the mainsail and main gaff-topsail.

This rule involves the same principles as those of Rear-Admiral T. O. Selfridge, adopted and used by him in the preparation of the allowance tables for 1870.

## STANDING AND RUNNING RIGGING.

*To determine the size of a piece of standing or running rigging.*

The size of the fore or main shroud having been determined for hemp, or wire of equivalent strength, from Table VII, use the decimal in the following table corresponding to the rope required by a multiplier. If wire be required, the circumference of the fore or main shroud in iron wire will be the unit used; if hemp or manila, the same circumference in hemp will be the unit, and the product will be the size of the rope required, in terms of the unit employed.

*Examples.*

Size of fore or main shroud (wire) .....	5	inches.
Decimal assigned for fore top-mast stay .....	.90	
For size of stay required .....	4.50	inches.
Size of fore or main shroud (hemp) .....	10.75	inches.
Decimal assigned for fore top-sail halliards .....	.38	
	8600	
	3225	
For size of fore top-sail halliards .....	4.0850	inches.

*Standing and running rigging.*

Rigging, etc.	Column of decimals.	Remarks.
Mizzen-pendant or shroud .....	.74	Wire.
Fore or main stay .....	1.25	
Mizzen stay.....	.90	
Fore storm-staysail stay .....	.83	
Fore or main topmast shroud .....	.65	
Mizzen-topmast shroud.....	.54	
Fore-topmast stay.....	.90	
Main-topmast stay .....	.88	
Mizzen-topmast stay .....	.58	
Fore or main topmast backstay .....	1.00	
Mizzen-topmast backstay.....	.80	
Fore or main topgallant shroud.....	.45	
Mizzen-topgallant shroud.....	.36	
Fore-topgallant stay.....	.48	
Main-topgallant stay .....	.53	
Mizzen-topgallant stay .....	.39	
Fore-topgallant backstay.....	.69	
Main-topgallant backstay .....	.69	
Mizzen-topgallant backstay .....	.48	
Halliards, fore staysail (whip) .....	.33	
Halliards, fore staysail (pendants).....	.45	
Downhauls, fore staysail .....	.28	
Sheets, fore staysail (whip).....	.30	
Sheets, fore staysail (pendants).....	.48	
Halliards (whips) fore top-mast staysail .....	.27	
Downhauls fore top-mast staysail.....	.28	
Sheet (whips) fore top-mast staysail.....	.35	
Pendants (sheet) fore top-mast staysail.....	.50	
Brails fore top-mast staysail.....	.23	
Net for head-sail .....		12th hemp.
Halliards fore top-gallant staysail .....	.31	
Downhauls fore top-gallant staysail .....	.22	
Whips (sheet) fore top-gallant staysail.....	.22	
Pendants (sheet) fore top-gallant staysail.....	.33	
FOREMAST AND YARD.		
Enttock-shrouds .....	.55	Iron rods set up with turnbuckles.
Slings, standing (jeers and slings combined).....	1.10	Wire.
Slings, preventer.....	1.00	
Lashings for preventer slings.....	.50	
Pendant tackle-falls.....	.40	4-strand Manilla.
Jeer-falls .....	.50	

Manilla rope to be used unless otherwise designated.



*Standing and running rigging—Continued.*

Rigging, etc.	Column of Decimals.	Remarks.
FOREMAST AND YARD—Continued.		
Jackstays, bending.....		Iron.
Jackstays, reefing.....	.33	
Foot-ropes.....		Wire 2½ inches.
Stirrups.....		Wire 1½ inches.
Flemish horses.....		Wire 1½ inches.
Lifts.....	.50	Wire.
Braces.....	.44	Standing part of wire to extend forward of smoke stack.
Tacks.....	.57	} Four-stranded manilla, tapered to ½ size and ¼ of length on inner end.
Sheets.....	.50	
Clew-garnets.....	.35	
Bowlines.....	.38	
Reef-tackles.....		Gun tackle purchase.
Buntlines.....	.30	
Buntline-whips.....	.28	Fiddle-blocks.
Lecch-lines.....	.24	
Clew-jiggers.....	.23	
Lift-jiggers.....	.32	Double and single blocks.
Bunt-whips.....	.30	
Halliards, fore storm-staysail.....	.36	
Downhauls, fore storm-staysail.....	.26	
Sheets, fore storm-staysail.....		Use jiggers.
Swinging-boom topping-lifts.....	.55	
Swinging-boom topping-lift lizards.....	.38	
Falls for topping-lifts.....	.31	
After-guys.....	.36	
Forward-guys.....	.36	
Gear tricing-lines.....	.28	
FORE-TOPMAST AND YARD.		
Catharpin legs.....	.54	Wire.
Top-burtons.....	.33	
Runners (jackstays).....	.40	Wire.
Top-pendants.....	.80	Four-strand manilla, long enough to allow mast to land on deck.
Top-tackle falls (two double blocks).....	.45	
Jackstays (bending).....		Iron.
Jackstays (reefing).....	.40	Wire.
Foot-ropes.....		Wire 2½ inches.
Stirrups.....		Wire 1½ inches.
Flemish horses.....		Wire 1½ inches.

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
<b>FORE-TOPMAST AND YARD—Continued.</b>		
Parrals .....	.63	Wire, two parts.
Topsail-tyes (first 5 classes) .....	.72	Flexible wire.
Topsail-tyes for other classes .....	.90	Flexible wire, 1 tye.
Halliards for tyes .....	.38	
Bell's purchase (below 5th class).....	.49	
Lifts.....	.64	Wire.
Braces .....	.41	
Sheets .....	.55	Four-strand manilla.
Clew-lines .....	.40	Two parts.
Bowlines.....	.34	
Buntlines.....	.36	
Reef-tackles.....	.38	Single secret-block on leech of sail.
Clew-jiggers (pendants).....	.35	
Clew-jiggers (whips) .....	.28	
Lift-jiggers .....	.28	
Bunt-jiggers .....	.30	Single, or whips.
<b>FORE-TOP-GALLANT-MAST AND YARD.</b>		
Lanyards for shrouds.....		See general rule.
Long mast-ropes .....	.47	4-strand manilla.
Long yard-ropes.....	.57	4-strand manilla.
Jackstays.....		Iron.
Foot-ropes .....	.28	
Stirrups .....	.24	
Snorters .....	.24	
Parrals .....	.32	Wire; to be leathered, double on the bight.
Lifts.....	.37	Hemp; 4-stranded.
Brace-pendants .....	.35	Wire.
Whips for brace-pendants.....	.25	
Halliards .....	.30	
Sheets .....	.40	4-strand manilla, tapered.
Clew-lines .....	.32	
Buntlines .....	.24	
Lift-jiggers .....	.23	
Bunt-whips .....	.23	
Tripping-lines.....	.24	
Heel-ropes .....	.28	
<b>MAINMAST AND YARD.</b>		
Futtock-shrouds .....	.55	Iron rods set up with turnbuckles.
Slings, standing (jeers and slings combined).....	1.20	
Slings (preventer).....	1.00	Wire.

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MAINMAST AND YARD—Continued.		
Lashings for slings .....	.50	
Pendant tackle-falls .....	.40	
Jeer-falls.....	.52	4-strand manilla.
Jackstays (bending).....		Iron.
Jackstays (reefing).....	.33	
Foot-ropes .....		Wire 2 $\frac{1}{4}$ -inch.
Stirrups .....		Wire 1 $\frac{1}{4}$ -inch.
Flemish horses .....		Wire 1 $\frac{1}{4}$ -inch.
Lifts.....	.50	Wire.
Braces .....	.44	
Tacks.....	.57	} 4-strand manilla, tapered to $\frac{3}{4}$ size and $\frac{1}{4}$ of length on inner end.
Sheets .....	.50	
Clew-garnets.....	.35	
Runners for main bowlines .....	.42	
Whips for bowlines .....	.25	
Reef-tackles.....		Gun-tackle purchase.
Buntlines .....	.30	
Buntline-whips .....	.28	Shoe-blocks.
Lecch-lines .....	.26	
Clew-jiggers .....	.25	
Lift-jiggers .....	.32	Double and single blocks.
Bunt-whips .....	.30	
MAIN-TOPMAST AND YARD.		
Catharpin legs ... ..	.54	Wire.
Top-burtens .....	.35	
Top-pendants .....	.80	4-strand manilla, long enough to allow mast to land on deck.
Runners (jackstays).....	.40	Wire.
Jackstays (bending) .....		Iron.
Jackstays (reefing).....	.40	Wire.
Foot-ropes .....		Wire 2 $\frac{1}{4}$ -inch.
Stirrups .....		Wire 1 $\frac{1}{4}$ -inch.
Flemish horses .....	.31	Wire 1 $\frac{1}{4}$ -inch.
Parrals .....	.68	Wire, two parts.
Preventer-parrals .....	.50	Wire.
Topsail-tyes (first 5 classes).....	.72	Flexible wire.
Topsail-tyes for other classes .....	.90	Flexible wire.
Halliards for tyes .....	.38	
Bell's purchase below 5th class .....	.49	
Lifts.....	.61	Wire.

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MAIN-TOPMAST AND YARD—Continued.		
Braces .....	.42	
Sheets .....	.58	2 manilla, 4-strand.
Clew-lines .....	.42	Two parts.
Bowlines .....	.34	
Buntlines .....	.36	
Reef-tackles .....	.40	Single secret-block on leech of sail.
Clew-jiggers (pendants) .....	.35	
Clew-jiggers (whips) .....	.28	
Lift-jiggers .....	.28	
Bunt-jiggers .....	.30	Single or whip.
Topmast staysail halliards .....	.32	} To be fitted only when required.
Topmast staysail downhauls .....	.28	
Topmast staysail sheets (pendants) .....	.51	
Topmast staysail sheets (whips) .....	.37	
MAIN-TOP-GALLANT-MAST AND YARD.		
Laniards for shrouds .....		See general rule.
Long mast-ropes .....	.48	} 4-strand manilla.
Long yard-ropes .....	.58	
Jackstays .....		Iron.
Foot-ropes .....	.30	
Stirrups .....	.24	
Snorters .....	.24	
Parrals .....	.34	Wire; leathered, double on bight.
Lifts .....	.38	4-strand hemp.
Brace-pendants .....	.36	Wire.
Whips for brace-pendants .....	.25	
Halliards .....	.30	
Sheets .....	.41	4-strand manilla, tapered.
Clew-lines .....	.34	
Buntlines .....	.26	
Lift-jiggers .....	.23	
Bunt-jiggers .....	.25	
Tripping-lines .....	.24	
Heel-ropes .....	.28	
MIZZEN-MAST AND CROSS-JACK YARD.		
Futtock-shrouds .....	.54	Iron rods, set up with turnbuckles.
Slings .....	.90	
Pendant tackle-falls .....	.33	
Foot-ropes .....		Wire 2½-inch.
Flemish horses .....		Wire 1½-inch.

Manilla rope to be used unless otherwise designated.



*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MIZZEN-MAST AND CROSS-JACK YARD—Cont'd.		
Stirrups .....		Wire 1½-inch.
Lifts .....	.60	Wire.
Braces .....	.30	
Lift-jiggers .....	.32	
MIZZEN-TOPMAST AND YARD.		
Laniards for shrouds and stays .....		See general rule.
Catharpin legs .....	.40	Wire.
Top-burtons .....	.30	
Top-pendants .....	.56	4-strand manilla, long enough to allow the mast to land on deck.
Jackstays (bending) .....		Iron.
Jackstays (reefing) .....	.30	Wire.
Foot-ropes .....		Wire 2½-inch.
Stirrups .....		Wire 1½-inch.
Flemish horses .....		Wire 1½-inch.
Parrals .....	.55	Wire, two parts.
Topsail-tyes .....	.60	Flexible wire.
Bell's purchases .....	.35	
Lifts .....	.40	Wire.
Braces .....	.26	
Sheets .....	.39	4-strand manilla, tapered, double on board all vessels.
Clew-lines .....	.32	Two parts.
Bowlines .....	.26	
Buntlines .....	.30	
Reef-tackles .....	.29	Single secret-block on leech of sail.
Clew-jiggers .....	.28	
Lift-jiggers .....	.25	
Bunt-jiggers .....	.24	Single or whip.
MIZZEN-TOP-GALLANT-MAST AND YARD.		
Laniards for shrouds and stays .....		See general rule.
Long mast-ropes .....	.35	4-strand manilla, tapered.
Long yard-ropes .....	.39	4-strand manilla, tapered.
Jackstays .....		Iron.
Foot-ropes .....	.26	Hemp.
Stirrups .....	.21	Hemp.
Parrals .....	.25	Wire, leathered, double on the bight.
Lifts .....	.32	Hemp.
Lift-jiggers .....	.20	
Braces .....	.23	Single.
Halliards .....	.26	

Manilla rope to be used unless otherwise designated.



*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MIZZEN-TOP-GALLANT-MAST AND YARD—Cont'd.		
Sheets .....	.31	
Clew-lines .....	.23	
Buntlines .....	.20	
Bunt-whips .....	.18	
Tripping-lines .....	.20	
Snorters .....	.20	
Heel-ropes .....	.20	
STORM-MIZZEN.		
Halliards .....	.26	Use mizzen-mast whip.
Sheets .....		Use jiggers.
SPANKER AND GAFF.		
Sheets .....	.35	
Peak onthaul pendants .....	.38	
Peak onthaul whips .....	.26	
Throat pendants .....	.32	Wire, long enough to reach deck.
Peak pendants .....	.50	Wire, long enough to reach deck.
Vangs (pendants) .....	.45	Wire.
Vangs (whips) .....	.25	
Downhauls .....	.28	
Clew-ropes .....	.28	
Upper brails .....	.19	
Middle brails .....	.23	
Lower brails .....	.23	
MAIN-TRYSAIL MAST AND GAFF.		
Peak pendants .....	.55	Wire, long enough to reach deck.
Throat pendants .....	.55	Wire, long enough to reach deck.
Vangs (pendants) .....	.50	Wire.
Vangs (whips) .....	.25	
Oonthaul pendants .....	.38	
Oonthaul whips .....	.26	
Downhauls .....	.28	
Clew-ropes .....	.28	
Tricing-lines .....	.20	
Upper brails .....	.19	
Middle brails .....	.23	
Lower brails .....	.23	
Sheets .....	.37	Gun-tackle purchase.
FORE-TRYSAIL MAST AND GAFF.		
Peak pendants .....	.55	Wire, long enough to reach deck.
Throat pendants .....	.55	Wire, long enough to reach deck.

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
FORE-TRYSAIL MAST AND GAFF—Continued.		
Outhaul pendants .....	.38	
Outhaul whips .....	.26	
Downhauls .....	.28	
Clew-ropes .....	.28	
Trieing-lines .....	.20	
Vangs (pendants) .....	.50	Wire.
Vangs (whips) .....	.25	
Upper brails .....	.19	
Middle brails .....	.23	
Lower brails .....	.23	
Sheets .....	.37	Gun-tackle purchase.
GAFF-TOPSAILS.		
Halliards .....	.28	} Allowed only to vessels with fore and aft rig, and barks.
Downhauls .....	.28	
Tacks .....	.30	
Outhauls .....	.30	
MISCELLANEOUS.		
Awnings, crow-foot halliards .....	.17	
Awnings, tackles .....	.21	
Awnings, bull-ropes .....	.30	
Awnings, earrings .....		
Awnings, lacings .....		
Awnings, stops .....		
Braces (preventer), fore and main yards.....	.35	} { One for each yard. Fitted with pendants long enough to reach slings of yard. Falls to be of same length.
Braces (preventer), fore and main-top-sail yards...	.35	
Bowlines, windsail .....		
Conductors, lightning .....	.15	Copper-wire rope.
Falls, cat .....	.52	} 4-strand manilla.
Falls, fish .....	.44	
Falls for stern-boats .....	.31	Size graduated by weight of boat.
Falls for quarter-boats .....	.35	
Falls for waist-boats .....	.35	4-strand manilla.
Falls for launch .....	.38	Required when stowed on rail. 4-strand manilla.
Falls, deck-tackles .....	.44	4-strand manilla.
Falls, stock and bill .....	.32	
Falls, jigger .....	.26 & .20	
Falls, compressor (B. D.) .....	.32	
Fenders, boat .....		Rope (10 to each launch with laniards).
Fenders, boat .....		Leather (1 set to all boats but launch with laniards). 10 for double-banked. 8 for single-banked.

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MISCELLANEOUS—Continued.		
Futtock-staves (iron).....		
Gaskets, harbor.....		1 set for each yard.
Gaskets, sea.....		1 set for each yard, gaff, and boom.
Guys for fish-davits.....	.38	Tackles, double and single blocks.
Guys for quarter-davits.....	.45	} Wire.
Guys for waist-davits.....	.45	
Gripes for boom-boats and boats stowed on rail...	.56	Clamp to gunwales, and set up with turnbuckles.
Gripes, outside boats.....		Sword-mat gripes.
Girtlines, hammock.....		2½ manilla.
Hawse-pendants, clear, with shackle.....	.90	5 fathoms to be chain.
Hawse-ropes.....	.51	6 fathoms to be chain, sister-hooks.
Hooks, Jacob's ladders.....		1 set to each vessel.
Halliards, windsail.....	.14	
Halliards, signal.....		White rope, braided, one set.
Hooks, fish (for anchors).....		Fitted with link and shackle.
Hammocks (lashing).....		15-thread manilla.
Hammock-cloth stops.....		6-thread hamboline.
Hammock jackstays.....	.31	4-strand hemp, fitted on a bight.
Ladders, Jacob's, lower rigging.....		Wire 1½-inch.
Ladders, stern.....		Wire 1½-inch.
Ladders, boom.....		Wire 1½-inch.
Ladders, fore and main topgallant masts.....		Wire 1½-inch.
Ladders, mizzen topgallant mast.....		Wire 1½-inch.
Ladders, trysails.....		Wire 1½-inch.
Lines, clothes, 2½-inch manilla.....		Fitted with 3-inch jackstay, main and mizzen rigging.
Lines, tricing, for clothes, main and mizzen rigging.....		Use mast-whips.
Lines, tricing, for hammocks.....		Use burtons or clew-jiggers.
Mats, chafing.....		As needed.
Mast-whips.....	.28	
Ropes, buoy.....	.60	
Ropes, back, for cat.....	.25	
Ropes, back, for fish.....	.23	
Ropes, ridge, for awnings.....		Wire 1½-inch.
Ropes, foot, for awnings.....		Wire 1½-inch.
Ropes, grab.....	.35	Galvanized wire.
Ropes, man, side.....	.30	Wormed, covered with canvas, and painted.
Ropes, man, hatchways.....		Assorted, covered with canvas, and painted.
Ropes, hook.....	.25	

Manilla rope to be used unless otherwise designated.

*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MISCELLANEOUS—Continued.		
Rudder pendants and chains.....	.68	Chains, iron; a short iron tiller should be bolted to after part of rudder. Fitted only when required.
Spans, quarter and waist davits.....	.45	Wire.
Spans (coal-bag) .....	.50	4-inch rope for all classes; hemp.
Shank-painters, fitted with triggers.....	.70	Chain, tapered on inboard end.
Straps, selvagees and others .....		Assorted.
Stoppers, cat-head, with triggers .....	.75	Chain, tapered on inboard end.
Stoppers, fighting.....	.30	Fitted with dead-eyes, rope strapped, with tails coach-whip fashion.
Stoppers, boat .....		Same size as falls.
Stoppers, bit .....	.80	Wire.
Stoppers, deck .....	.56	Wire.
Stoppers, braces, sheets, etc., .....		Assorted.
Stays, triatic (pendants) .....	.77	Allowed to vessels carrying boats in-board only; wire.
Stays, storm-mizzen .....	.60	Wire.
Stays, triatic (span).....	.56	Wire.
Swabs, deck .....		
Swinging-boom pendants .....	.45	Wire.
Swabs, hand .....		
Scotchmen, fair leaders (Walton's) .....		Assorted; enough for equipment.
Scotchmen, others .....		As many as required.
Sheer-poles, lower rigging .....		As required; iron.
Sheer-poles, topmast rigging .....		As required; iron.
Tackles, relieving .....	.34	Manila. Fitted when required.
Tackles, fore, pendant.....		Fitted with double blocks.
Tackles, main, pendant.....		Fitted with double blocks.
Tackles, fore triatic-stay .....	.42	Fitted with double blocks.
Tackles, main triatic-stay .....	.42	Fitted with double blocks.
Tackle-pendants, fore-yard .....	.77	Wire; fitted with lizard.
Tackle-pendants, main-yard .....	.77	Wire; fitted with lizard.
Tackles, or jiggers for main braces.....	.20	On standing part of main braces.
Travelers, main-topsail braces .....		On mizzen-topmast.
Travelers, topsail halliards .....		One for each tly-block.
Topping-lifts, quarter-davits.....		Wire.
Topping-lifts, spans .....		Wire.
Topping-lifts, falls .....		
Tricing-lines, main braces.....		
Wheel-ropes .....	.46	Manilla or wire.

Manilla rope to be used unless otherwise designated.



*Standing and running rigging—Continued.*

Rigging, etc.	Column of decimals.	Remarks.
MISCELLANEOUS—Continued.		
Wheel-ropes (spare) .....	.46	Manilla.
Whips, yard and stay, water, pendants .....	.50	Wire. Lower one of chain with hooks at lower ends, and rings near the lower blocks for connecting the purchases.
Whips, yard and stay, water, falls .....	.33	Single blocks.
Whips, fore and main yards and stays .....	.33	Single.
Whips, hatch .....	.33	



## Table of miscellaneous rigging, etc.

[In column Kind, W. denotes iron wire; H. denotes hemp; M. manilla; Ch. chain;

MISCELLANEOUS RIGGING, ETC.	FIRST CLASS.			SECOND CLASS.			THIRD CLASS.			FOURTH CLASS.			FIFTH CLASS.			SIXTH CLASS.			SEVENTH CLASS.		
	Chicago, Philadelphia, Newark, San Francisco, and Class.			Baltimore, Charleston.			Brooklyn, Hartford, Lancaster, Pensacola, Richmond.			Boston, Atlanta, No. 7, No. 8, and Class.			Galena, Marion, Mohican, Osipee, Swatara, Omaha.			Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipisc.			Yorktown, Concord, Bennington, No. 8, No. 10, No. 11, and Class.		
	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.
Awning crowfoot halliards		1 3/4	M.		1 1/2	M.	5	1 1/2	M.		1 1/2	M.	5	1 1/2	M.	5	1 1/4	M.		1 1/4	M.
Awning tackles (fore and aft)		2 1/4	M.		2	M.	5	2	M.		2	M.	5	2	M.	5	2	M.		2	M.
Awning hull ropes		3 1/4	M.		2 3/4	M.	4	2 3/4	M.		2 3/4	M.	4	2 1/2	M.	4	2 1/2	M.		2 1/2	M.
Awning earings		18th	M.		18th	M.	14	18th	M.		15th	M.	14	15th	M.	14	15th	M.		15th	M.
Awning stops		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.
Awning lacing		12th	M.		12th	M.	8	12th	M.		12th	M.	8	12th	M.	8	12th	M.		12th	M.
Bowlines, windsail		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.
Braces, preventer, fore and main yards.	4	3 1/4	M.				4	3 1/4	M.				4	3 1/4	M.	4	3	M.			
Braces, preventer, fore and main-topsail yards.	4	3 1/4	M.				4	3 1/4	M.				4	3 1/4	M.	4	3	M.			
Conductors, lightning																					
Fenders, boat																					
Fenders, boat																					
Falls, cat	1	4 3/4	M.	1	4 1/2	M.	1	4 1/2	M.	1	4 1/4	M.	1	4 3/4	M.	1	3 3/4	M.	1	4 1/4	M.
Falls, fish	1	4 3/4	M.	1	4	M.	1	4 1/2	M.	1	4 1/4	M.	1	4 3/4	M.	1	3 3/4	M.	1	4 1/4	M.
Falls, stern-boats (a)	2	3 1/4	M.	2	2 3/4	M.	2	2 3/4	M.	2	2 3/4	M.	2	2 3/4	M.	2	2 1/2	M.	2	2 1/2	M.
Falls, quarter-boats		3 1/4	M.		3 1/4	M.		3 1/4	M.		3 1/4	M.		3 1/4	M.		3 1/4	M.		3 1/4	M.
Falls, waist-boats		3 3/4	M.		3 1/2	M.		3 1/2	M.		3 1/4	M.		3 1/2	M.		3 1/4	M.		3 1/4	M.
Falls for launches	4		M.	4		M.	4		M.	4		M.	4		M.	4		M.	4		M.
Falls, deck-tackle	1	4 1/2	M.	1	4	M.	1	4	M.	1	4	M.	1	3 3/4	M.	1	3 1/4	M.	1	3 1/2	M.
Falls, B D compressors		3 1/2	M.		3	M.		3	M.		3	M.		2 3/4	M.		2 1/2	M.		2 1/2	M.
Falls, jigger	8 { 2 3/4 to 2 1/4 }		M.	8 { 2 1/2 to 1 3/4 }		M.	8 { 2 1/4 to 1 3/4 }		M.	8 { 2 1/4 to 1 3/4 }		M.	8 { 2 1/4 to 1 3/4 }		M.	8 { 2 to 1 1/2 }		M.	4 { 2 to 1 1/2 }		M.
Gaskets, sea (one set for each yard, gaff, and boom).																					
Gaskets, harbor																					
Girtlines, hammock jackstays		2 3/4	H.		2 3/4	H.		2 3/4	H.		2 3/4	H.		2 3/4	H.		2 1/2	H.		2 1/2	H.
Girtlines, hammock	6	2 3/4	M.	6	2 3/8	M.	6	2 3/4	M.	6	2 3/4	M.	6	2 3/4	M.	6	2 1/2	M.	6	2 1/2	M.
Gripes, outside boats																					

Falls for launches in and out tackles, 3-inch manilla, to be fitted when required.

(a) The size of boats' falls given will be modified by the weight of the boats.



## Table of miscellaneous rigging, etc.

C. R. copper rope; I. &amp; C. iron and chain. In column Size, Th. denotes thread.]

EIGHTH CLASS.			NINTH CLASS.			SAILING VESSELS.			PADDLE-WHEEL STEAMERS.			IRONCLADS.						REMARKS.
Alert, Ranger, Yantic, Petrel, and Class.			Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Yeuvinus.			Constellation, Portsmouth, Jamestown.			Monocacy, Talapoosa, Michigan.			FIRST CLASS.			SECOND CLASS.			
No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	
5	1¼	M.	3	1	M.	4	1¼	M.	4	1¼	M.							As many as required.
5	2	M.	3	1¼	M.	4	2	M.	4	2	M.	4	2	M.	4	2	M.	
4	2¼	M.	3	2	M.	4	2½	M.	3	2¼	M.	3	2¾	M.	3	2½	M.	
11	15th	M.	8	12th	M.	14	15th	M.	12	15th	M.	8	15th	M.	8	15th	M.	
	15th	M.		12th	M.		15th	M.		12th	M.		15th	M.		15th	M.	
8	12th	M.	4	12th	M.	8	12th	M.	6	12th	M.	6	12th	M.	6	12th	M.	
	15th	M.		15th	M.		15th	M.		15th	M.		15th	M.		15th	M.	
4	2¾	M.				4	3½	M.										
4	2¾	M.				4	3½	M.										
One for each mast. C. R.																		
Rope, one set, with laniards, to each sailing launch.																		
Leather, one set, with laniards, to all boats except launches; 10 for double banked; 8 for single banked.																		
1	3¾	M.	1	3	M.	1	4¼	M.	1	3¾	M.	1	4½	M.	1	3½	M.	To be fitted only when required.
1	3¾	M.	1	3	M.	1	4¼	M.	1	3¾	M.	1	4½	M.	1	3½	M.	
2	3	M.				2	3¾	M.										Size to be determined by weight of boat in special cases.
	3	M.		2¼	M.		3	M.		3	M.		3¾	M.		3	M.	
	3¼	M.					3¾	M.		3¼	M.		3¾	M.		3	M.	
	3½	M.					4	M.										Two to each launch when stowed on rail.
1	3½	M.	1	2¾	M.	1	4	M.	1	3½	M.	1	4	M.	1	3½	M.	2 to each compressor, and only fitted when required.
	2½	M.		2	M.		2½	M.		2¼	M.		2¾	M.		2½	M.	
6	2 to 1½	M.	2	1¼	M.	8	2 to 1½	M.	6	1½ to 1¾	M.	6	2¼ to 1¾	M.	6	2 to 1½	M.	

(a) For monitors, to be fitted as required.

Table of miscellaneous rigging, etc.—Continued.

[In column Kind, W. denotes iron wire; H. denotes hemp; M. manilla; Ch. chain;]

MISCELLANEOUS RIGGING, ETC.	FIRST CLASS.			SECOND CLASS.			THIRD CLASS.			FOURTH CLASS.			FIFTH CLASS.			SIXTH CLASS.			SEVENTH CLASS.		
	Chicago, Philadelphia, Newark, San Francisco, and Class.			Baltimore, Charleston.			Brooklyn, Hartford, Lancaster, Pensacola, Richmond.			Boston, Atlanta, No. 7, No. 8, and Class.			Galena, Marion, Mohican, Ossipee, Quinnebag, Swatara, Omaha.			Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.			Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.		
	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.
Gripes, inside boats																					
Guys, fish-davits	2	3½	M.	2	3½	M.	2	3½	M.	2	3½	M.	2	3¼	M.	2	3	M.	2	3	M.
Guys, quarter-davits		2¼	W.		2	W.		2	W.		2	W.		2	W.		2	W.		1¾	W.
Guys, waist-davits		2¼	W.		2	W.		2	W.		2	W.		2	W.		2	W.		1¾	W.
Hawse pendants (clear)	1	3¼ 1 ch.	W.	1	2¾ 1½ ch.	W.	1	2¾ 1½ ch.	W.	1	2¾ 1½ ch.	W.	1	2½ 1½ ch.	W.	1	2½ 1½ ch.	W.	1	2½ 1½ ch.	W.
Hawse ropes	1	2 1½ ch.	W.	1	1¾ 1½ ch.	W.	1	1¾ 1½ ch.	W.	1	1¾ 1½ ch.	W.	1	1¾ 1½ ch.	W.	1	1½ 1½ ch.	W.	1	1½ 1½ ch.	W.
Hanks (iron, galvanized)																					
Hooks, Jacob's ladders, seized on rigging.																					
Hooks, fish, for anchor	2			2			2			2			2			2			2		
Halliards, signal	{ 9 to 12th } II.			{ 9 to 12th } II.			{ 9 to 12th } II.			{ 9 to 12th } II.			{ 6 to 9th } II.			{ 6 to 9th } II.			{ 6 to 9th } II.		
Halliards, windsail		1½	M.		1¼	M.		1¼	M.		1¼	M.		1¼	M.		1¼	M.		1¼	M.
Hammock-cloth, stops		6th	II.		6th	II.		6th	II.		6th	II.		6th	II.		6th	II.		6th	II.
Ladders, Jacob's, lower rigging (a)																					
Ladders, rope, stern																					
Ladders, rope, boom																					
Ladders, rope, topgallant-mast, fore and main.																					
Ladders, rope, topgallant-masts, mizen.																					
Ladders, tryalls																					
Lines, clothes (short)		2¼	M.		2¼	M.		2¼	M.		2¼	M.		2¼	M.		2¼	M.		2¼	M.
Lines, tricing																					
Mats for chafing-gear																					
Mast-whips		2½	M.		2½	M.		2½	M.		2½	M.		2½	M.		2¼	M.		2¼	M.
Relieving-tackles		3	M.		3	M.		3	M.		3	M.		3	M.		2¾	M.		2¾	M.
Ratlines																					

(a) Wire rope to be set up with turnbuckles.

Table of miscellaneous rigging, etc.—Continued.

C. R. copper rope; I &amp; C. iron and chain. In column Size, Th. denotes thread.]

EIGHTH CLASS.			NINTH CLASS.			SAILING VESSELS.			[PADDLE-WHEEL STEAMERS.			IRONCLADS.						REMARKS.
												FIRST CLASS.			SECOND CLASS.			
Alert, Ranger, Yantic, Petrel, and Class.			Fortune, Leyden, Mayflower, Nina, Palos, Speedwell, Standish, Triana, Ictrepid, Alarm, Despatch, Vesuvius.			Constellation, Portsmouth, Jamestown.			Monocacy, Talapoosa, Michigau.			Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.			Ajax, Cananche, Catskill, Canonculus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.			
No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	
2	3	M.	2	2½	M.	2	3	M.	2	2¾	M.	2	3¼	M.	2	3	M.	As many as required.
	1¾	W.		1¾	W.		2	W.		2	W.		2¼	W.		1¾	W.	Tackles; double and single blocks.
	1¾	W.					2	W.		2	W.		2¼	W.		1¾	W.	Two to each boat.
1	2¼	W.				1	2¾	W.	1	2¼	W.	1	3¼	W.	1	2½	W.	Two to each boat.
	1½	ch.					1½	ch.		1½	ch.		1½	ch.		1½	ch.	5 fathoms to be chain, with shackle.
1	1½	W.	1	3¼	H.	1	1¼	W.	1	1¼	W.	1	2	W.	1	1½	W.	Sister-hooks, 6 fathoms to be chain.
	1½	ch.		1½	ch.		1½	ch.		1½	ch.		1½	ch.		1½	ch.	
																		As many as required; Lowe's patent.
																		One set to each vessel.
2			1			2			1			1			1			Fitted with link and shackle, and made to correspond to anchor.
	6 to 9th	H.		6 to 9th	H.		6 to 9th	H.		6 to 9th	H.		6 to 9th	H.		6 to 9th	H.	White rope, braided; one set.
	1¼	M.		1¼	M.		1¼	M.		1¼	M.		1¼	M.		1¼	M.	As many as required.
	6th	H.					6th	H.		6th	H.							Hambroline, one set.
																		As many as required. Wire 1¼ inches.
2¼	M.						2¼	M.										Fitted with 3-inch jackstays, main and mizzen rigging, one set.
																		Use mast-whips.
																		As needed.
	2¼	M.		1¾	M.		2¼	M.	2	M.		2½	M.		2¼	M.		Two for each mast.
	2¾	M.					2¾	M.	2½	M.		3	M.		2¾	M.		As required.
																		Iron, sufficient to go in the wake of the doublings of the lower rigging.

## Table of miscellaneous rigging, etc.—Continued.

[In column Kind, W. denotes iron wire; H. denotes hemp; M. manilla; Ch. chain;

MISCELLANEOUS, RIGGING, ETC.	FIRST CLASS.			SECOND CLASS.			THIRD CLASS.			FOURTH CLASS.			FIFTH CLASS.			SIXTH CLASS.			SEVENTH CLASS.		
	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.
	Chicago, Philadelphia, Newark, San Francisco, and Class.			Baltimore, Charleston.			Brooklyn, Hartford, Lancaster, Pensacola, Richmond.			Boston, Atlanta, No. 7, No. 8, and Class.			Galena, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.			Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.			Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.		
Ratlines, standing rigging. (a)-----	{ 21 & 18th } II.			{ 21 & 18th } H.			{ 21 & 18th } II.			{ 21 & 15th } II.			{ 21 & 15th } II.			{ 21 & 15th } II.			{ & 15th } II.		
Ropes, buoy-----	2	6½	M.	2	5½	M.	2	5½	M.	2	5½	M.	2	5	M.	2	4¾	M.	2	4¾	M.
Ropes, back, for cat-----	2	2¾	M.	2	2¾	M.	2	2¼	M.	2	2¼	M.	2	2¼	M.	2	2	M.	2	2	M.
Ropes, back, for fish-----	2	2½	M.	2	2¼	M.	2	2	M.	2	2	M.	2	2	M.	2	1¾	M.	2	1¾	M.
Ropes, ridge, for awnings-----																					
Ropes, grab-----																					
Ropes, man, side (b)-----	2½		M.	2½		M.	2½		M.	2½		M.	2½		M.	2½		M.	2½		M.
Ropes, man, hatchways. (b)-----																					
Ropes, hook-----	4	2¾	M.	4	2¼	M.	4	2½	M.	4	2½	M.	4	2½	M.	4	2½	M.	4	2½	M.
Rigging for boats*-----																					
Rungs for Jacob's ladders-----																					
Spans, quarter and waist-davits-----	2		W.	2		W.	2		W.	2		W.	2		W.	2		W.	2		W.
Scotchmen, fairleads (Walton's)-----																					
Scotchmen, other-----																					
Shank-painters, fitted with triggers (c).-----	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	2	1½	Ch.
Straps,-----	48		M.	48		M.	48		M.	48		M.	48		M.	48		M.	48		M.
Stoppers, cathead, fitted with triggers (a).-----	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	4	1½	Ch.	2	1½	Ch.
Stoppers, fighting-----	10	3¼	II.				30	2¾	II.	10	2¾	II.	30	2½	II.	30	2½	II.	10	2½	II.
Stoppers, boats'-----																					
Stoppers, hit-----	2	3¾	W.	2	3¾	W.	2	3¾	W.	2	3¾	W.	2	3¾	W.	2	3¾	W.	2	3½	W.
Stoppers, deck, wire, with laniards-----	12	4	W.	12	4	W.	12	4	W.	12	4	W.	12	4	W.	12	4	W.	9	3	W.
Stoppers, braces, sheets, etc-----																					
Stays, triatic (span)-----	1	2½	W.				1	2½	W.	1	2½	W.	1	2¼	W.	1	2	II.			
Stays, triatic (pendants)-----	2	3	W.				2	3	W.	2	3	W.	2	2¾	W.	2	2½	W.			
Swabs, deck-----	18			48			48			36			36			36			30		
Swabs, hand-----	48			48			48			48			24			24			48		
Sheer-poles, lower rigging-----			I.						I.			I.			I.			I.			I.
Sheer-poles, topmast rigging-----			I.						I.			I.			I.			I.			I.

\* Steam-launches to be rigged with two lugs; other launches, slooped-rigged with jib; cutters and whale-boats, sliding-gunter fashion with one sprit-sail, without jib.

(a) Enough for equipment.



Table of miscellaneous rigging, etc.—Continued.

C. R. copper rope; I. &amp; C. iron and chain. In column Size, Th. denotes thread.]

EIGHTH CLASS.			NINTH CLASS.			SAILING VESSELS.			PADDLE WHEEL STEAMERS.			IRONCLADS.						REMARKS.	
Alert, Ranger, Yantic, Petrel, and Class.			Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.			Constellation, Portsmouth, Jamestown.			Monocacy, Talapoosa, Michigan.			First Class.			Second Class.				
No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.		
18 & 15th } II.			15th II.			21 & 15th } II.			15th II.									One set, fitted to set up with turnbuckles. Wire 1½ inches.	
2	4¾	M.				2	4¾	M.	2	4¾	M.	2	5	M.	2	4¾	M.		One set, galvanized wire covered with canvas and painted white.
2	2	M.				2	2	M.	2	1¾	M.								
2	1¾	M.				2	1¾	M.	2	1¾	M.							As required.	
																			Assorted as required.
2½ M.			2 M.			2½ M.			2½ M.			2½ M.			2½ M.			As required.	
4	2½	M.	2	1½	M.	4	2½	M.	4	2½	M.	4	2½	M.	4	2½	M.		Enough for equipment.
																		As required for boats.	
2 W.			1¾ W.			2 W.			2 W.			2 W.			2 W.				Assorted, enough for equipment.
																		Assorted, enough for equipment.	
2	⅞	Ch.	2	⅞	Ch.	4	1⅞	Ch.	2	⅞	Ch.	2	1⅞	Ch.	2	⅞	Ch.		Galvanized-iron chains, inboard end tapered.
48		M.	12		M.	48		M.	24		M.	18		M.	18		M.	Assorted.	
2	⅞	Ch.	2	⅞	Ch.	4	1⅞	Ch.	2	⅞	Ch.	2	1⅞	Ch.	2	⅞	Ch.		Galvanized-iron chains, inboard end tapered.
																		Fitted with dead-eyes, rope strapped with tails, coach-whip fashion.	
24	2¼	II.				30	2½	II.	12	2¼	II.								Same size as falls; two to each boat.
2	2¼	W.				6	3½	W.										Assorted as needed.	
9	3	W.	6	2½	W.	12	3¾	W.	6	3½	W.	6	4	W.	6	3¾	W.		Allowed only to vessels carrying boats inboard.
																		Allowed only to vessels carrying boats inboard.	
						1	2½	W.											As many as required.
						2	3	W.											
30			6			36			24			24			24			As many as required.	
24			12			24			18			24			24				
I.			I.			I.			I.										
I.						I.													

out jibs or jiggers; commanding officers' gigs, two sprit-sails and jibs, or sliding-gunter fashion without jib, at the option of the commander; dinghys,  
 (b) To be wormed, covered with canvas, and painted. (c) In vessels with sheet-anchors stowed in waist, only two allowed.

## Table of miscellaneous rigging, etc.—Continued.

[In column Kind, W. denotes iron wire; H. denotes hemp; M. manilla; Ch. chain;

MISCELLANEOUS RIGGING, ETC.	FIRST CLASS.			SECOND CLASS.			THIRD CLASS.			FOURTH CLASS.			FIFTH CLASS.			SIXTH CLASS.			SEVENTH CLASS.		
	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.	No.	Size.	Kind.
	Chicago, Philadelphia, Newark, San Francisco, and Class.			Baltimore, Charleston.			Brooklyn, Hartford, Lancaster, Pensacola, Richmond.			Boston, Atlanta, No. 7, No. 8, and Class.			Galena, Marlow, Mohican, Ossipee, Swatara, Omaha.			Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.			Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.		
Swinging-boom pendants.....	4	1¾	W.	4	1¾	W.	4	1¾	W.	4	1¾	W.	4	1¾	W.	4	1¾	W.	4	1¾	W.
Tackles, fore-pendant.....		¾	W.		¾			¾	M.		¾	M.		¾	M.		¾	M.		¾	M.
Tackles, main-pendant.....		¾	M.		¾			¾	M.		¾	M.		¾	M.		¾	M.		¾	M.
Tackles, fore-stay, triatic.....	1	¾	M.				1	¾	M.	1	¾	M.	1	¾	M.	1	¾	M.			
Tackles, main-stay, triatic.....	1	¾	M.				1	¾	M.	1	¾	M.	1	¾	M.	1	¾	M.			
Tackle-pendants, fore yard.....	1	3	W.	1	3	W.	1	3	W.	1	3	W.	1	¾	W.	1	¾	W.			
Tackle-pendants, main yard.....	1	3	W.	1	3	W.	1	3	W.	1	3	W.	1	¾	W.	1	¾	W.			
Tackles or jiggers for main braces.....	2	¾	M.	2	¾	M.	2	¾	M.	2	¾	M.	2	¾	M.	2	¾	M.			
Turnbuckles, Jacob's ladders (brass).....																					
Travelers main-topsail braces.....																					
Travelers topsail halliards.....																					
Topping-lifts, quarter-davits.....	2		W.	2		W.	2		W.	2		W.	2		W.	2		W.	2		W.
Topping-lifts, spans.....		¾	W.		¾	W.		¾	W.		¾	W.		¾	W.		¾	W.		¾	W.
Topping-lifts, falls.....		¾	M.		¾	M.		¾	M.		¾	M.		¾	M.		¾	M.		¾	M.
Tricing-lines, main braces.....	2	21th	H.	2	21th	H.	2	21th	H.	2	21th	H.	2	21th	H.	2	18th	H.			
Whips, yard and stay, water, pendants.	4	¾	W.				4	2	W.	4	2	W.	4	2	W.	4	¾				
Whips, yard and stay, water, falls.....	2	¾	M.				2	3	M.	2	3	M.	2	¾	M.	2	¾	M.			
Whips, fore and main yards, and stays.....	4	¾	M.				4	3	M.	4	3	M.	4	¾	M.	4	¾	M.			
Wheel-ropes (sets).....	3	5	M.	3	¾	M.	3	¾	M.	3	¾	M.	3	4	M.	3	¾	M.	3	¾	M.
Whips, hatch.....	5	¾	M.	5	3	M.	3	3	M.	5	3	M.	3	¾	M.	3	¾	M.	3	¾	M.
Tackles, sail, fore-topsail.....																					
Tackles, sail, main-topsail.....																					
Tackles, sail, mizzen-topsail.....																					

NOTE.—Boarding, splinter, and torpedo nettings are only furnished in time of war, and then as required by commanding officer.



*Table of miscellaneous rigging, etc.—Continued.*

C. R. copper rope; I. & C. iron and chain; Hd. h'de. In column Size, Th. denotes thread.)

[illegible]

6 A V



## BOATSWAIN'S DEPARTMENT.

*Articles furnished by Bureau of Equipment to the rigging lofts at naval stations to rig a vessel. These articles should be required from estimates made out as exactly as possible.*

Strapping, ratline, etc.	Strapping, ratline, etc.
* Blades, hacksaw .....	Red lead ..... pounds.
Boiled linseed-oil..... gallons.	Ratline, 21-thread ..... fathoms.
Canvas, old ..... yards.	Ratline, 18-thread ..... fathoms.
Canvas, No. .... bolts.	Ratline, 15-thread ..... fathoms.
Cotton sheeting, unbleached ..... yards.	Seizing-stuff, $\frac{1}{2}$ -inch wire ..... pounds.
Duck, Raven's ..... bolts.	Seizing-stuff, $\frac{3}{8}$ -inch wire ..... pounds.
* Hand-saw files.....	Seizing-stuff, $\frac{1}{4}$ -inch wire ..... pounds.
Henseline ..... pounds.	Seizing-stuff, $\frac{3}{16}$ -inch wire ..... pounds.
Hambroline ..... pounds.	Tacks, copper ..... papers.
Leather..... sides.	Tar..... barrels.
Marline ..... pounds.	Tallow ..... pound
Needles, sail, assorted .....	Twine..... pounds.
Oil of tar ..... barrels.	Worming, soft..... pounds.
Palms, mounted .....	Roundline, 4-yarn ..... pounds.
* Pincers (flat mouth) ..	Yarn, spun, 3-yarn..... pounds.
* Pincers (round mouth) .....	Yarn, spun, 2-yarn..... pounds.

\* As many as necessary to fit wire rigging.

## BOATSWAIN'S DEPARTMENT—Continued.

[In column Kind, H denotes hemp ;

ARTICLES.	FIRST CLASS.		SECOND CLASS.		THIRD CLASS.		FOURTH CLASS.		FIFTH CLASS.		SIXTH CLASS.		SEVENTH CLASS.	
	Chicago, Philadelphia, Newark, San Francisco, and Class.		Baltimore, Charleston.		Brooklyn, Hartford, Lancaster, Pensacola, Richmond.		Boston, Atlanta, No. 7, No. 8, and Class.		Galena, Marion, Mohican, Ossipee, Swatara, Omaha.		Ironquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.		Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.	
	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.
Axes, junk	2		2		2		2		2		1		1	
Brushes, clamp	24		24		24		18		18		12		12	
Brushes, coir (a)	144		144		144		100		100		100		84	
Brushes, hand	60		60		60		48		48		36		36	
Brushes, tar, long-handled	10		10		10		6		6		4		4	
Brushes, tar, short-handled	5		5		5		4		4		2		2	
Brooms, corn	144		144		144		100		100		84		84	
Commanders	1		1		1		1		1		1		1	
Conductors (lightning)	1	C. R.	1	C. R.	1	C. R.	1	C. R.	1	C. R.	1	C. R.	1	C. R.
Calls, silver (b)														
Cordage, 6-thread, seizing	150	H.	100	H.	150	H.	150	H.	150	H.	100	H.	100	H.
Cordage, 9-thread, seizing	150	H.	100	H.	150	H.	150	H.	150	H.	100	H.	100	H.
Cordage, 12-thread	50	M.	50	M.	68	M.	50	M.	68	M.	68	M.	30	M.
Cordage, 12-thread, seizing	75	M.	75	H.	140	H.	75	H.	140	H.	100	H.	50	H.
Cordage, 15-thread, ratline	200	H.	100	H.	200	H.	200	H.	100	H.	100	H.	100	H.
Cordage, 18-thread	50	M.	50	M.	100	M.	50	M.	100	M.	100	M.	50	M.
Cordage, 18-thread, ratline	200	H.	100	H.	400	H.	200	H.	200	H.	200	H.	300	H.
Cordage, 21-thread, ratline	400	H.	100	H.	400	H.	400	H.	400	H.	400	H.		
Cordage, 24-thread, ratline	200	H.	100	H.	200	H.	200	H.	200					
Cordage, 1½-inch	100	M.	75	M.	100	M.	75	M.	50	M.	75	M.	50	M.
Cordage, 1¾-inch	100	M.	50	M.	150	M.	100	M.	75	M.	125	M.	150	M.
Cordage, 2-inch	100	M.	50	M.	150	M.	100	M.	300	M.	250	M.	100	M.
Cordage, 2¼-inch	200	M.			300	M.	300	M.	225	M.	200	M.		
Cordage, 2½-inch	150	M.	100	M.	250	M.	175	M.	200	M.	175	M.	150	M.
Cordage, 2¾-inch	100	M.	50	M.	150	M.	150	M.	125	M.	100	M.	50	M.
Cordage, 3-inch	150	M.	25	M.	150	M.	100	M.	125	M.	40	M.	40	M.
Cordage, 3¼-inch	100	M.	50	M.	150	M.	125	M.	150	M.	75	M.	75	M.
Cordage, 3½-inch	100	M.	120	M.	150	M.	100	M.	100	M.	50	M.	50	M.
Cordage, 3¾-inch	125	M.	100	M.	50	M.	50	M.	50	M.				
Cordage, 4-inch	100	M.	50	M.	50	M.	50	M.	50	M.	60	M.	60	M.
Cordage, 4¼-inch	100	M.			50	M.	30	M.	30	M.				
Cordage, 4½-inch	50	M.	50	M.	50	M.	50	M.						
Cordage, 5-inch														

(a) The brush back to be of hard wood. The cover to be secured to the brush by six (6) brass screws. The hole to be bored through covering well into back of brush. Tufts number 7 one way by 17 the other, are 1½ inches long, and ¼ inch diameter at base.

(b) One for each boatswain's mate allowed, and two spare ones additional.

## BOATSWAIN'S DEPARTMENT—Continued.

M. manilla; C. R. copper rope.]

EIGHTH. CLASS.		NINTH CLASS.		SAILING VESSELS.		PADDLE- WHEEL STEAMERS.		IRONCLADS.			
								FIRST CLASS.		SECOND CLASS.	
Alert, Ranger, Yantic, Petrel, and Class.		Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Des- patch, Vesuvius.		Constellation, Portsmouth, James- town.		Monowacy, Tallapoosa, Michigan.		Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.		Ajax, Comanche, Catskill, Canoni- cus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Santucket, Passaic, Wyandotte.	
1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.
1				1							
12		6		12		6		24		12	
72		24		120		48		144		84	
36		12		36		18		24		24	
4		1		4		1		4			
2		2		2		2		4		4	
72		18		84		36		144		60	
1				1							
1	C. R.			1	C. R.	1	C. R.				
75	II.	20	II.	100	II.	20	II.	20	II.	20	II.
75	II.	20	II.	100	II.	20	II.	20	II.	20	II.
68	M.	25	M.	68	M.	68	M.	68	M.	68	M.
70	II.	15	II.	100	II.	15	II.	15	II.	15	II.
100	II.			200	II.	100	II.	100	II.	100	II.
100	M.	25	M.	100	M.	100	M.	100	M.	100	M.
300	II.	50	II.	300	II.	50	II.	100	II.	100	II.
				400	II.						
50	M.	50	M.	75	M.	100	M.				
120	M.	60	M.	125	M.	75	M.			25	M.
250	M.	25	M.	250	M.	75	M.	25	M.	20	M.
150	M.	40	M.	200	M.	25	M.			30	M.
100	M.			175	M.	75	M.	40	M.	25	M.
80	M.			100	M.			25	M.		
40	M.			100	M.			40	M.	40	M.
40	M.			100	M.			100	M.	50	M.
		20	M.	50	M.			100	M.		
60	M.					20	M.			30	M.
				60	M.			100	M.	20	M.
								100	M.		
								50	M.		

REMARKS.

NOTE.—The allowances of stores for the several classes of vessels herein named shall be for one year, and those quantities only shall be put on board at the commencement of a cruise; but as certain articles are required for constant consumption, and others seldom or not at all required, the additional stores allowed for any subsequent year of cruise shall not exceed those allowed for the first year. Should any stores remain over at the expiration of any year of the cruise, they shall be regarded as a part of the allowance for the ensuing year, and no articles not absolutely required for use shall be obtained from naval storekeepers or purchased abroad.

## BOATSWAIN'S DEPARTMENT—Continued.

[In column Kind, H. denotes hemp.]

ARTICLES.	FIRST CLASS.		SECOND CLASS.		THIRD CLASS.		FOURTH CLASS.		FIFTH CLASS.		SIXTH CLASS.		SEVENTH CLASS.	
	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.
	Chicago, Philadelphia, Newark, San Francisco, and Class.		Baltimore, Charleston.		Brooklyn, Hartford, Lancaster, Pensacola, Richmond.		Boston, Atlanta, No. 7, No. 8, and Class.		Galena, Juniata, Marion, Mohican, Osage, Quinnebang, Swatara, Omaha.		Ironquils, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.		Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.	
Cordage, 5½-inch.....do.....														
Cordage, lanyard stuff, 4-stranded.....do.....														
Cod-line.....pounds.....	225	H.	225	H.	225	H.	150	H.	150	H.	100	H.	90	H.
Spun-yarn, 2-yarn.....do.....	150	H.	150	H.	150	H.	125	H.	125	H.	100	H.	80	H.
Spun-yarn, 3-yarn.....do.....	150	H.	150	H.	150	H.	125	H.	125	H.	100	H.	80	H.
Marline (tarred).....do.....	150	H.	100	H.	275	H.	150	H.	200	H.	175	H.	100	H.
Roundline.....pounds.....	100	H.	50	H.	175	H.	100	H.	150	H.	125	H.	50	H.
Houeline.....do.....	300	H.	200	H.	300	H.	250	H.	250	H.	200	H.	150	H.
Halliards (signal).....														
Fairleads (Walton's).....	18		18		18		18		12		12		12	
Fids, setting.....	2		2		2		2		2		1		1	
Fids, splicing.....	4		4		4		4		4		4		2	
Grains.....	1		1		1		1		1		1		1	
Grapnels, hand.....	4		4		4		4		3		3		2	
Hacksaws, hand (wire rigging).....	3		3		3		3		3		3		2	
Hanks (iron), galvanized.....														
Hammeck lashings.....														
Hammock-rings (iron).....														
Harpoons.....	1		1		1		1		1		1		1	
Heavers, hickory.....	6		6		6		6		6		4		3	
Hooks, single (assorted).....	75		75		75		50		50		40		40	
Hooks, sister (assorted).....	60		60		60		40		40		30		30	
Hooks, fishing (assorted).....	200		200		200		150		150		125		100	
Hooks, shark.....	2		2		2		2		2		2		2	
Hatchets.....	5		5		5		3		3		3		2	
Hammers.....	2		2		2		2		2		2		2	
Junk.....pounds.....	500	H.	500	H.	2,000	H.	500	H.	1,200	H.	1,000	H.	200	H.
Jack, or riggers' screws.....sets.....	2		2		2		2		2		1		1	
Jackasses (rope).....	4	H.	4	H.	4	H.	4	H.	4	H.	4	H.	4	H.
Knives (shoemakers').....	3		3		3		3		3		3		2	
Links, chain (split for steering-quadrant).....	10		10		10		10		10		10		6	
Lines, fishing (assorted).....	60		60		60		50		50		40		30	
Leather, rigging, sides of.....	4		1		6		3		4		3		3	



## BOATSWAIN'S DEPARTMENT—Continued.

M. manilla.

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yantic, Petrel, and Class.	Fortune, Leyden, Mayflower, Nina, Palos, Plata, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amphitrite, Dictator, Miantonomoh, Monadnock, Paritan, Roanoke, Terror, Maine, Texas.	Ajax, Camanche, Catskill, Canonicus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	
Kind.	Kind.	Kind.	Kind.	Kind.	Kind.	
80	10	100	40	225	50	One spare set of lanyards in coil for all sizes of standing rigging.
75	15	100	25	20	20	For hammock-clews, to be of 3-thread white hemp.
75		100		20	20	
125	15	175	25	15	15	
90	10	125	20	20	10	
50	10	200	100	50	10	
12		12	12			One spare set throughout, same size as allowed for equipment.
1		1				Assorted.
2	1	4	2	2	1	
1		1				
2		2	2	3	2	
2	1	3	1	3		
						One-fifth the number required for equipment. Low's.
						Two sets—one fitted—one in coil—15th.
						Galvanized. One set.
1		1				
2	2	4	4	4	4	
35	12	40	25	12	12	
30	12	30	25	12	12	
100	25	125	50	100	75	
2				1		
2	1	3	1	1	1	
2	1	2	1	2	2	
700	150	1,000	250	200	200	If a greater quantity can be conveniently stored, it may be allowed.
1		1	1			A set to consist of three screws.
4	2	4	2	2	2	
2	1	3	1	1	1	
6		10	4	10	6	Supplied only to vessels having steering-quadrants.
30	10	40	10	40	30	
3	1	3	1	1	1	



## BOATSWAIN'S DEPARTMENT—Continued.

[In column Kind, H. denotes hemp ;

ARTICLES.	FIRST CLASS.		SECOND CLASS.		THIRD CLASS.		FOURTH CLASS.		FIFTH CLASS.		SIXTH CLASS.		SEVENTH CLASS.	
	Chicago, Philadelphia, Newark, San Francisco, and Class.		Baltimore, Charleston.		Brooklyn, Hartford, Lancaster, Pensacola, Richmond.		Boston, Atlanta, No. 7, No. 8, and Class.		Galena, Juniata, Marion, Mohican, Ossipee, Quinnebaug, Swatara, Omaha.		Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nysic.		Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.	
	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.
Leather, bellows, sides of.....	3		2		6		4		4		3		3	
Marlino-spikes (assorted sizes).....	60		60		60		50		50		40		30	
Marline-spikes (steel).....	6		6		6		6		6		6		6	
Mallets, serving.....	8		8		8		6		6		5		4	
Mauls (iron).....	3		3		3		3		3		3		2	
Needles, sail.....	100		100		100		80		80		70		60	
Palms, mounted.....	20		20		20		15		15		12		12	
Pincers (flat-mouth).....sets.....	1		1		1		1		1		1		1	
Pincers (round-mouth).....do.....	1		1		1		1		1		1		1	
Rules, two-foot.....	1		1		1		1		1		1		1	
Seines.....	1	75-fm.	1	75-fm.	1	60-fm.	1	60-fm.	1	60-fm.	1	60-fm.	1	0-fm.
Seizing, wire.....														
Serving-boards.....	8		8		8		6		6		5		4	
Sand.....														
Tags, Dennison.....pounds.....	400		400		400		300		250		250		200	
Twine, seine.....do.....	15		15		15		10		10		10		10	
Twine, sewing (flax).....do.....	40		40		40		30		30		25		25	
Thimbles, assorted.....	50		50		50		50		50		40		40	
Tar.....barrels.....	2		1		2		2		2		1		1	
Tar, coal.....do.....	2		2		2		2		2		1		1	
Tar, oil of.....do.....	1		1		1		1		1		1		1	
Tape-line (wire-wove, 100 feet).....	1		1		1		1		1		1		1	

## BOATSWAIN'S DEPARTMENT—Continued.

M. manilla; C. R. copper rope.]

EIGHTH CLASS.		NINTH CLASS.		SAILING VESSELS.		PADDLE-WHEEL STEAMERS.		IRONCLADS.		REMARKS.
Alert, Ranger, Yantic, Petrel, and Class.		Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.		Constellation, Portsmouth, Jamestown.		Monocacy, Tulapoosa, Michigan.		FIRST CLASS. SECOND CLASS.		
1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	1 year.	Kind.	
3		1		3		1		1		
30		6		40		6		12		
6		2		6		2		2		For fitting wire rigging.
4		1		5		1		1		
2		1		3		1		3		
50		12		70		18		20		Assorted.
12		4		12		6		6		Roping and seamlog, assorted.
1				1						A set to be three in number, of different sizes, for working wire rigging.
1				1						A set to be three in number, of different sizes, for working wire rigging.
1		1		1		1		1		
1	40-fm.			1	60-fm.					To be put up in barrels.
1st, 3d, 4th, 5th, 6th, and 7th classes, 300 fathoms of $\frac{1}{2}$ , $\frac{3}{8}$ , $\frac{1}{4}$ and $\frac{5}{16}$ inch; 2d and 8th classes, 100 fathoms of same.										
4		1		5		1		1		As much as needed.
200				250				200		
10				10						
20		5		25		10		10		
30		12		40		24		12		
1		$\frac{1}{2}$		1		$\frac{1}{2}$		$\frac{1}{2}$		
1		$\frac{1}{2}$		1		1		1		
1		$\frac{1}{2}$		1		$\frac{1}{2}$		$\frac{1}{2}$		
1		1		1		1		1		

## CARPENTER'S DEPARTMENT.

MISCELLANEOUS.	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galea, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipisic.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.
Awls, brad	10	10	10	8	8	6	6
Apparatus, boat-detaching	2	2	2	2	2	2	2
Awls, scratch	3	3	3	2	2	2	2
Baskets, coal	150	150	100	150	100	75	100
Brushes, dusting	3	3	3	2	2	2	2
Bath-bricks	75	75	75	50	50	50	40
Brushes, whitewash	24	24	24	18	18	15	12
Cork jackets							
Candle-stands (tin)	40	35	35	30	30	25	18
Charcoal barrels	4	4	3	3	3	3	2
Coal for steaming							
Coal, bituminous							
Cocks, stop, for starting hose	2	2	2	2	2	1	1
Conductor-points	3	3	3	3	3	3	3
Engines, handy-billy	1	1	1	1	1	1	1
Fire-grenades doz.	5	5	5	4	4	4	4
Hooks and eyes, brass (for furniture)	48	48	48	36	36	36	36
Hose, leading feet							
Hose, force-suction feet	45	45	45	36	36	36	27
Hose, washers	100	100	100	80	80	80	70
Hose, main-pump sets			2		1	1	
Hose-pipes, flexible rubber	4	4	4	3	3	3	3
Hose-couplings sets	3	3	3	2	2	2	2
Hose-coupling expander	1	1	1	1	1	1	1
Hose-spanners	6	6	6	5	5	5	4
Irons, hand, nickel-plated							
Irons leg, nickel-plated							
Leather, pump sides	2	2	2	2	2	2	2
Lime, slaked casks	10	8	8	8	8	6	6
Paste, polishing 1-lb. boxes	40	40	20	30	20	15	30
Pick-axes and grubbing-hoes	2	2	2	2	2	2	2
Rungs for Jacob's ladders	24	24	24	20	20	15	15

## CARPENTER'S DEPARTMENT—Continued.

EIGHTH CLASS.		NINTH CLASS.		SAILING VESSELS.		PADDLE-WHEEL STEAMERS.		IRONCLADS.		REMARKS.	
								FIRST CLASS.	SECOND CLASS.		
Alert, Ranger, Yantic, Petrel, and Class.		Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.		Constellation, Portsmouth, Jamestown.		Monocacy, Talapoosa, Michigan.		Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.		Ajax, Cananache, Catekill, Canonieus, Jason, Lehigh, Malopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.		
	6		3		6		3		3	All tools to be handled and fitted for immediate use.	
2			2		2		2		2		
	2		2		2		2		2		
50	25				60		150		100	Of 40 pounds capacity.	
	2		1		2		2		2	For use in storerooms.	
	40		12		80		24		24		
	12		6		15		12		18	Calcuttining-brush pattern.	
										Sufficient for one-fourth the complement of officers and crew.	
	18		6		25		18		24	Fitted for candles only.	
	2				3		1		2		
										As required.	
										Blacksmith's; as much as needed.	
	1				1		1		1		
3	2	2		3	2	2	1				
1				1		1		1	1	For fresh-water purposes.	
3		2		4		3		4	3	To be placed in racks in different parts of ship below decks.	
	36		12		36		36		24	24 Chairs to be fitted to hook to bulkheads.	
										Three times the length of vessels between perpendiculars for three-decked vessels, twice for two decks, and one and one-half for single decks. From two to four sections of old base will be put on board for washing decks.	
27				36		27		27	27	In sections of nine feet length, with a strainer for one section.	
	70		12		80		70		80	70 Rubber.	
1				1		1				Canvas, for carrying bilge-water to the scuppers. When required.	
3	1	1	1	3	1	1	1	2	1	2	1
	2		1		2		2		2		2
1				1		1		1		1	
4	4	2	2	5	5	4	4	5	5	6	4
	1		1/2		2		1		2		1
	6		2		6		6		8		6
	10								40		25
	1		1		2		1		1		1
	12				15						



## CARPENTER'S DEPARTMENT—Continued.

MISCELLANEOUS.	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osipier, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipisc.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.	Outfit. Stores, 1 year.
Shovels .....	6	6	6	4	4	4	4
Stencil letters and numbers.....sets.	1	1	1	1	1	1	1
Scrapers.....	80	70	70	60	60	50	50
Swifter-ropes for capstans .....							
Slings (canvas breeches).....	2	2	2	2	2	2	1
Spades .....	3	3	3	3	3	3	3
Squillgees.....	50	45	45	40	40	40	40
Squillgee-plates (rubber).....	50	45	45	40	40	40	40
Stoves (for hard coal), with platforms.....							
Trucks (iron).....	2	2	2	2	2	2	2
Turnbuckles (brass).....	4	4	4	4	4	4	4
Wood, fire, clean .....							



## CARPENTER'S DEPARTMENT—Continued.

EIGHTH CLASS.		NINTH CLASS.		SAILING VESSELS.		PADDLE-WHEEL STEAMERS.		IRONCLADS.		REMARKS.	
Alert, Ranger, Yantic, Petrel, and Class.		Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.		Constellation, Portsmouth, Jamestown.		Monocacy, Talapoosa, Michigan.		FIRST CLASS.			SECOND CLASS.
Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.	Outfit.	Stores, 1 year.		Outfit.
	3	2	4	4	3	3	One for each capstan.				
	1	1	1	1	1	1	One to be long-handled.				
	40	12	50	40	18	18	Fitted with rubber plates and handles.				
1			2	1			As required when not heated by steam.				
	2	1	3	2	2	2	For wheeling coal to scuttles.				
36	12	40	24	36	36	36	As much as can be stored.				
	36	12	40	24	36	36					
2				2	2	2					
	4		4	2							

## CARPENTER'S DEPARTMENT—Continued.

Cooking-stoves.	Pots and covers.	Iron tea-kettles, enameled.	Dish-kettles and covers.	Spiders.	Griddles.	Gridirons.	Roasting-spits for oven.	Dippers.	Round pans.	Square pans.	Dripping-pans.	Pokers.	Lifters.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	1	1	1	1	1	1	1	1	1	1	1	1	1

## ADDITIONAL COOKING UTENSILS

Cook's knives.	Chopping-knives.	Sieves.	Chopping-dishes.	Soapstone griddles.	Colanders.	Roasting-pans.	Baking-pans.	Iron spoons.	Iron pots.	Tormentors, small.	Tea-kettles, copper.	Kneading-troughs.	Rolling-pins.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
2	1	1	1	1	1	2	2	2	1	1	1	1	1

## COOKING UTENSILS FOR COMMANDERS OF

Cook's knives.	Chopping-knives.	Sieves.	Chopping-dishes.	Iron griddles.	Soapstone griddles.	Colanders.	Roasting-pans.	Baking-pans.	Iron spoons.	Iron pots.	Tormentors, small.	Tea-kettles, copper.	Tea-kettles, iron, enameled.	Kneading-troughs.	Rolling-pins.	Pastry-boards.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
2	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1

## CARPENTERS' DEPARTMENT—Continued.

Shakers.	Scrapers.	Handle ash-pans.	Ash-pans.	Wood grates.	Spare coal grates and lining.	Flat-iron beaters.	Hot-water tanks.	Warming-closets.	REMARKS.
No.	No.	No.	No.	No.	No.	No.	No.	No.	
1	1	1	1	1	1	1	1	1	

## FURNISHED BY EQUIPMENT BUREAU.

Pastry-boards.	Pie-plates.	Frying-pans.	Fish-kettles.	Coffee-mills.	Skimmers.	Cake-turners.	Wood pestles.	Waffle-irons.	Wire broilers.	Baking-cups.	Coffee-boilers, tin.	Wash-pans.	Knife-trays.	Cleavers, small.	Knife-boards.	Sauce or stew pans, enameled.	Dredge-boxes, tin.	REMARKS.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1	6	2	1	1	1	1	1	1	2	12	1	1	1	1	1	4	1	

## VESSELS NOT SUPPLIED WITH COOKING-STOVES.

Pie-plates.	Frying-pans.	Fish-kettles.	Coffee-mills.	Skimmers.	Cake-turners.	Wood pestles.	Waffle-irons.	Wire broilers.	Baking-cups.	Coffee-boilers, tin.	Wash-pans.	Knife-trays.	Cleavers, small.	Knife-boards.	Gridirons.	Sauce or stew pans, enameled.	Dredge-boxes, tin.	REMARKS.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
6	2	1	1	1	1	1	1	1	6	1	1	1	1	1	1	4	1	

## CARPENTER'S DEPARTMENT—Continued.

COOKING UTENSILS FOR CREW.										
	Baking-pans, sheet-iron.	Copper coffee-hoilers.*	Copper tea-kettles, large.	Skillets.	Coal-hods.	Sauce or stew-pans.	Scouse-kettles (enameled).	Frying-pans.	Iron spoons, large and small.	Cleavers, small.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1st and 2d classes, and 1st class ironclads...	10	2	1	2	3	10	30	10	6	1
3d and 4th classes .....	8	2	1	2	3	7	24	7	6	1
5th and 6th classes, and 2d class ironclads...	8	2	1	2	3	7	18	7	6	1
7th and 8th classes .....	7	2	1	2	3	5	14	5	6	1

## WARD-ROOM

GALLEY COOKING UTENSILS.																
	Cook's knives.	Chopping-knives.	Sieves.	Chopping-dishes.	Soapstone griddles.	Iron griddles.	Colanders.	Roasting-pans.	Baking-pans.	Iron spoons.	Iron pots.	Tea-kettles, copper.	Kneading-troughs.	Rolling-pins.	Pastry-boards.	Pie-plates.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1st and 2d classes, and 1st class ironclads...	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	6
3d and 4th classes .....	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	6
5th and 6th classes, and 2d class ironclads...	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	6
7th and 8th classes .....	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	6

## STEERAGE AND

GALLEY COOKING UTENSILS.																					
Cook's knives.	Chopping-knives.	Sieves.	Chopping-dishes.	Soapstone griddles.*	Iron griddles.*	Colanders.	Roasting-pans.*	Baking-pans.*	Iron spoons.	Iron pots.*	Tea-kettles, copper.	Kneading-troughs.	Rolling-pins.	Pastry-boards.	Pie-plates.	Frying-pans.	Fish-Kettles.	Coffee-mills.	Skimmers.	Cake-turners.	Wood-pestles.
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
2.	2	2	2	* 1	* 1	2	* 2	* 2	2	* 1	2	2	2	2	8	2	1	2	2	2	2

NOTE.—A special allowance will be authorized where galleys or ranges are provided.

## CARPENTER'S DEPARTMENT—Continued.

COOKING UTENSILS FOR CREW.				EXTRA ARTICLES.		REMARKS.
Knives and forks, ship's cook.	Candle-stands, tin.	Safety-matches, in tin boxes, gross.	Axes, wood.	Grate-bars, extra.	Soapstone linings, extra.	
No.	No.	No.	No.	Sets.	Sets.	
4	2	1	2	2	2	* Necessary officers' messes may make use of these boilers.
4	2	1	2	2	2	
4	2	1	2	2	2	
4	2	1	2	2	2	

## OFFICERS.

GALLEY COOKING UTENSILS.																		REMARKS.
Frying-pans.	Fish-kettles.	Coffee-mills.	Skimmers.	Cake-turners.	Wood-pasties.	Waffle-irons.	Wire broilers.	Baking-cups.	Coffee-boilers, tin.	Wash-pans.	Knife-trays.	Cleavers.	Knife-boards.	Gridirons.	Sauce or stew-pans, enameled.	Tea-kettles, iron, enameled.	Dredge-boxes, tin.	
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
2	1	1	1	1	1	1	2	12	1	1	1	1	1	1	10	1	1	
2	1	1	1	1	1	1	2	12	1	1	1	1	1	1	10	1	1	
2	1	1	1	1	1	1	2	12	1	1	1	1	1	1	8	1	1	
2	1	1	1	1	1	1	2	12	1	1	1	1	1	1	8	1	1	

## WARRANT OFFICERS.

GALLEY COOKING UTENSILS.												REMARKS.
Waffle-irons.*	Wire broilers.*	Baking-cups.	Coffee-boilers, tin.	Wash-pans.	Knife-trays.	Cleavers.*	Knife-boards.	Gridirons.	Sauce or stew pans, enameled.	Tea-kettles, iron, enameled.*	Dredge boxes, tin.	
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
* 1	* 1	12	2	2	2	* 1	1	2	6	* 1	2	To be divided between the two messes. Those marked with a star are for joint use.



## SAILMAKER'S DEPARTMENT.

SAILS.	FIRST CLASS.				SECOND CLASS.				THIRD CLASS.				FOURTH CLASS.				FIFTH CLASS.				SIXTH CLASS.				SEVENTH CLASS.					
	Chicago, Philadelphia, Newark, San Francisco, and Class.				Baltimore and Charleston.				Brooklyn, Hartford, Lancaster, Pensacola, Richmond.				Boston, Atlanta, No. 7, No. 8, and Class.				Galena, Marion, Mohican, Ossipee, Swatara, Omaha.				Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.				Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.					
	No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.			
	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.		
Fore-sails	2	2 2 1/2	5 1/2	5 1/2					2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5						
Fore-topsails	2	2 2 1/2	5 1/2	4 1/2					2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4						
Fore-topgallant sails	2	4 2	3 1/2	2 1/2					2	4 2	3 1/2	2 1/2	2	4 2	3 1/2	2 1/2	2	5 2	3 1/2	2 1/2	2	5 2	3 1/2	2 1/2						
Fore-royals									2	8 1 1/2	2 1/2	2 1/2					2	8 1 1/2	2 1/2	2 1/2	2	8 1 1/2	2 1/2	2						
Main-sails	2	2 2 1/2	5 1/2	5 1/2					2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5 1/2	2	2 2 1/2	5 1/2	5						
Main-topsails	2	2 2 1/2	5 1/2	4 1/2					2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4 1/2	2	2 2 1/2	5 1/2	4 1/2						
Main-topgallant sails	2	4 2	3 1/2	2 1/2					2	4 2	3 1/2	2 1/2	2	4 2	3 1/2	2 1/2	2	5 1 1/2	3 1/2	2 1/2	2	5 1 1/2	3 1/2	2 1/2						
Main-royals									2	8 1 1/2	2 1/2	2 1/2					2	8 1 1/2	2 1/2	2 1/2	2	8 1 1/2	2 1/2	2 1/2						
Mizzen-topsails									2	3 2 1/2	4 1/2	3					2	4 2 1/2	4	3	2	4 2 1/2	4	3						
Mizzen-topgallant sails									2	6 1 1/2	3	2 1/2					2	7 1 1/2	3	2 1/2	2	7 1 1/2	3	2 1/2						
Mizzen-royals									2	9 1 1/2	2 1/2	2 1/2					2	9 1 1/2	2	2	2	9 1 1/2	1 1/2	1 1/2						
Flying-jibs				2 1/2					2	5	2 1/2	2 1/2	2 1/2				2	6	2 1/2	2 1/2	2 1/2	6	2 1/2	2 1/2	2 1/2					
Jibs	2	2	3 1/2	3 1/2					2	2	3 1/2	3 1/2	2	2	3 1/2	3 1/2	2	3	3	3	3	2	3	2 1/2	2 1/2	2 1/2	2	3	2 1/2	2 1/2
Fore try-sails	1	1 2 1/2	3	3 1/2					1	1 2 1/2	3	3 1/2	1	1 2 1/2	3	3 1/2	1	2 2 1/2	3	3 1/2	1	2 2 1/2	3	3 1/2	1	2 2 1/2	3	3 1/2		
Main try-sails	2	1 2 1/2	3	3 1/2					2	1 2 1/2	3	3 1/2	2	1 2 1/2	3	3 1/2	2	2 2 1/2	3	3 1/2	2	2 2 1/2	3	3 1/2	2	2 2 1/2	3	3 1/2		
Storm-mizzens	1	1	3 1/2	3 1/2					1	1	3 1/2	3 1/2					1	1	3	3	1	1	3	3	1	1	2 1/2	2 1/2		
Spankers	2	2 2 1/2	3	3 1/2					2	2 2 1/2	3	3 1/2					2	3 2 1/2	3	3 1/2	2	3 2 1/2	3	3 1/2	2	3 2 1/2	3	3 1/2		
Fore-storm stay-sails	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3	3	1	1	3	3	1	1	2 1/2	2 1/2		
Fore-topmast stay-sails	2	2	3 1/2	3 1/2					2	2	3 1/2	3 1/2	2	2	3 1/2	3 1/2	2	2	3	3	2	2	3	3	2	2	2 1/2	2 1/2		
Mizzen-storm stay-sails	1	1	3 1/2	3 1/2					1	1	3 1/2	3 1/2					1	1	3	3	1	1	3	3	1	1	2 1/2	2 1/2		
Main-topmast stay-sails	1	7	2 1/2	2 1/2					1	7	2 1/2	2 1/2					1	8	2 1/2	2 1/2	1	8	2 1/2	2 1/2						
Mizzen-topmast stay-sails	1	7	2 1/2	2 1/2					1	7	2 1/2	2 1/2	1	7	2 1/2	2 1/2	1	8	2 1/2	2 1/2	1	8	2	2	1	8	2	2		
Main-storm stay-sails	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3 1/2	3 1/2	1	1	3	3	1	1	2 1/2	2 1/2	1	1	2 1/2	2 1/2		
Gaff topsails																									2	6	2 1/2	2 1/2		

NOTE.—The first four classes, including first-class sailing-vessels, will have



## SAILMAKER'S DEPARTMENT—Continued.

EIGHTH CLASS.				NINTH CLASS.				SAILING-VESSELS.				PADDLE-WHEEL STEAMERS.				REMARKS.				
Alert, Ranger, Yantic, Petrel, and Class.				Fortune, Leyden, Mayflower, Pales, Pinta, Speedwell, Standish, Despatch, Vesuvius.				Constellation.				Saratoga, Jamestown, Portsmouth.					Monocacy, Tahaposa, Michigan.			
No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.		No. of sails.		Size of rope.			No. of sails.		Size of rope.	
No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.	No. of canvas.	Head.	Foot.	Leech.		No. of canvas.	Head.	Foot.	Leech.
2	2 2 1	4 1	4 1					2	2 2 1	5 1	5 1	2	2 2 1	5 1	5 1					Fore-and-aft sails, as well as courses, topsails, and topgallant sails, are to be fitted with galvanized-iron clews, and shall have lip-thimbles at the eye-splices. Foot-ropes, in the wake of chafes, shall be covered with leather.
2	2 2 1	4 1	3 1					2	2 2 1	5 1	4 1	2	2 2 1	5 1	4 1					First and second reefs of topsails shall be French reefs with grab-lines; other reefs to be fitted with manilla points.
2	7 1 1	2 1	2 1					2	4 2	3 1	2 1	2	5 2	3 1	2 1					Blocks in the head of fore-and-aft sails will be fitted with patent rollers.
2	9 1 1	1 1	1 1					2	8 1 1	2 1	2 1	2	8 1 1	2 1	2 1					
2	3 2 1	4 1	4 1					2	2 2 1	5 1	5 1	2	2 2 1	5 1	5 1					
2	2 2 1	4 1	3 1					2	2 2 1	5 1	4 1	2	2 2 1	5 1	4 1					
2	7 1 1	2 1	2 1					2	4 2	3 1	2 1	2	5 1 1	3 1	2 1					
2	9 1 1	1 1	1 1					2	8 1 1	2 1	2 1	2	8 1 1	2 1	2 1					
								2	3 2 1	4 1	3 1	2	4 2 1	3 1	3 1					
								2	6 1 1	3 1	2 1	2	7 1 1	2 1	2 1					
								2	9 1 1	2 1	2 1	2	9 1 1	1 1	1 1					
2	7	2	2	2				2	5	2 1	2 1	2	6	2 1	2 1	2 1				
2	4	2 1	2 1	2 1				2	2	3 1	3 1	2	3	2 1	2 1	2 1				
1	3 2	2 1	2 1	2 1	1	4 2	2 1	2 1	1	1 2 1	3 1	3 1	1	2 2 1	2 1	2 1	1	3 2 1	2 1	2 1
2	3 2	2 1	2 1	2 1	1	4 2	2 1	2 1	2	1 2 1	3 1	3 1	2	2 2 1	2 1	2 1	1	3 2 1	2 1	2 1
1	1	2 1	2 1	2 1	1	2	2 1	2 1	1	1	3 1	3 1	1	1	3 1	3 1	1	1	3 1	3 1
2	4 2	2 1	2 1	2 1					2	2 2 1	3 1	3 1	2	3 2 1	2 1	2 1				
1	1	2 1	2 1	2 1	1	2	2 1	2 1	1	1	3 1	3 1	1	1	3 1	3 1	1	1	3 1	3 1
2	2	2 1	2 1	2 1	*1	6	2 1	2 1	2	2	3 1	3 1	2	2	3 1	3 1	*1	5	2 1	2 1
1	1	2 1	2 1	2 1					1	1	3 1	3 1	1	1	3 1	3 1				
1	8	2 1	2 1	2 1					1	7	2 1	2 1	1	8	2 1	2 1				When required.
1	8	2	2	2					1	7	2 1	2 1	1	8	2	2				
1	1	2 1	2 1	2 1					1	1	3 1	3 1	1	1	3 1	3 1				When required.
2	6	2 1	2 1	2 1	2	7	2 1	2 1								2	7	2 1	2 1	2 1

one fore sail, one fore topsail, and one main-topsail of No. 1 canvas.

## SAILMAKER'S DEPARTMENT—Continued.

	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
MISCELLANEOUS.	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsc.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.
Awnings, ships'.....set.	1	1	1	1	1	1	1
Beeswax for twine.....pounds.	20	20	20	20	20	15	15
Bags, clothes.....							
Bags, hammock.....							
Bags, pea-jacket.....	10	10	10	10	10	10	8
Bags, mess.....							
Bags, coal.....							
* Bags, coaling.....	8	8	8	8	8	8	8
Canvas, cotton, No. 1.....bolts.			$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	
Canvas, cotton, No. 2.....do.	$\frac{1}{2}$			$\frac{1}{2}$			$\frac{1}{2}$
Canvas, cotton, No. 4.....do.	2	1	2	1	1	1	$\frac{1}{2}$
Canvas, cotton, No. 5.....do.	1	1	1	1	1	$\frac{1}{2}$	1
Canvas, cotton, No. 6.....do.							
Canvas, cotton, No. 8.....do.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Canvas, cotton, bag.....do.	1	1	1	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Canvas, cotton, No. 10.....do.	$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$		
Canvas, flax, No. 1.....do.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
Canvas, flax, No. 2.....do.	1		2	1	1	1	$\frac{1}{2}$
Canvas, flax, No. 3.....do.	$\frac{1}{2}$		1	$\frac{1}{2}$	1	1	$\frac{1}{2}$
Canvas, flax, No. 4.....do.	1	$\frac{1}{2}$	1	1	1	1	$\frac{1}{2}$
Canvas, flax, No. 5.....do.	$\frac{1}{2}$		1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
Canvas, flax, No. 6.....do.	$\frac{1}{2}$		1	$\frac{1}{2}$	1	1	
Canvas, flax, No. 7.....do.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Canvas, flax, No. 8.....do.	1	1	1	1	1	1	1
Canvas, old.....yards.	500	500	500	500	300	300	100
Clews, iron, galvanized.....	6		6	6	6	6	4
Cloths, bunt, topsails.....							
Cloths, hammock, blacked.....set.	1	1	1	1	1	1	1
Covers, hammock-box.....do.							

\* To be of No. 1 flax canvas, doubled and roped.

## SAILMAKER'S DEPARTMENT—Continued.

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Xantic, Petrel, and Class.	Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amphitrite, Dictator, Mantonoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.	Ajax, Camanche, Catskill, Canonicus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	
1	1	1	1	1	1	First six classes of No. 4 cotton canvas; other classes, including monitors and 2d-class paddle-wheel steamers, of No. 5.
15	2	15	2	5	5	
						One black and one white bag allowed for each man and boy of the vessel's complement, except where lockers are provided, when two white bags will be allowed.
						One for each gun's crew; of No. 6 flax canvas.
8	1	10	2	5	4	Of No. 5 flax canvas.
						One for each berth-deck mess, of No. 7 flax canvas.
						Coal-bags of gunny cloth; not to be put on board or purchased, unless necessary for carrying extra coal.
4			2			Eight allowed for masted iron-clads.
		$\frac{1}{2}$				
$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	A bolt of canvas in this table is to be of 80 yards; but where the bolt consists of 40 yards, the allowance will be doubled.
1	$\frac{1}{2}$	4		$\frac{1}{2}$	$\frac{1}{2}$	
		$\frac{1}{2}$				
$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	A bolt of bag-canvas to contain 100 running yards.
$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
			$\frac{1}{2}$			
$\frac{1}{2}$		1				
1		2				
1		3				
$\frac{1}{2}$		$1\frac{1}{2}$	1			
	$\frac{1}{2}$	1				
1		1				
$\frac{1}{2}$		1	$\frac{1}{2}$			
1		1	$\frac{1}{2}$	1	1	
200	50	300	100	100	75	
4		6	2			For topsails and courses.
						Of No. 3 or No. 4 flax canvas, one set as required.
1		1	1			No. 4 cotton canvas.
	1			1	1	No. 4 cotton canvas.

## SAILMAKER'S DEPARTMENT—Continued.

	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
MISCELLANEOUS.	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marlton, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.
Commanders, iron.....	3	3	3	3	3	3	2
Cots, cabin.....	4	4	4	2	2	2	2
Cots, ward-room.....	8	8	8	6	6	4	4
Cots, hospital.....	12	12	10	8	8	6	6
Covers, head.....							
Covers, boom.....			1	1	1	1	
Covers, binnacle.....	3	3	3	3	3	3	3
Covers, skylight.....							
Covers, capstan.....							
Covers, sail, fore-and-aft.....							
Covers, mainmast.....	1	1	1	1	1	1	1
Cover, mainsail.....	1	1	1	1	1	1	1
Cover, main-topsail.....	1	1	1	1	1	1	1
Covers, top and chain-chests.....							
Covers, wheel.....	1	1	1	1	1	1	1
Covers, reel.....one set							
Covers, windsail.....							
Curtains, awning.....							
Dividers, drafting.....	1	1	1	1	1	1	1
Duck, ravens, cotton.....bolts	1	1/2	1	1	1	1	1
Duck, ravens, flax.....do	1	1/2	1	1	1	1	1
Fids, setting.....	2	2	2	2	2	1	1/2
Fids, splicing.....	6	6	10	10	8	8	6
Hammock numbers.....							
Hammocks.....sets	1	1	1	1	1	1	1
Hammock canvas.....bolts	1	1	1	1	1	1	1/2
Hoods for hammock nettings.....set	1	1	1	1	1	1	1
Hoods for hatches.....							
Hooks, sail.....	8	8	8	8	6	6	5
Knives, sail.....	8	8	8	8	6	6	5
Leather, bellows, sides.....	1	1	3	3	2	2	1
Line, measuring.....	2	1	1	1	1	1	1
Needles, seaming.....	150	150	150	125	125	125	

## SAILMAKER'S DEPARTMENT—Continued.

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yantic, Petrel and Class.	Fortune, Leyden, Mayflower, Niba, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.	Ajax, Canauche, Catskill, Canonius, Jason, Lehigh, Mahoeac, Mahtatan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	
2		3	1	1	1	Assorted sizes.
2		2	2	1	1	
3	1	4	2	4	3	
4	1	6	2	6	4	
						No. 4 cotton canvas, painted; allowed only to vessels where the head is exposed.
		1				No. 4 cotton canvas, unpainted.
3		3	1	1	1	No. 6 cotton canvas, oiled.
						As required; No. 6 cotton canvas, oiled.
						No. 6 cotton canvas, oiled. Allowed for exposed wooden capstans.
						One for each sail; No. 6 cotton canvas.
1						No. 4 flax canvas, unpainted.
1						No. 4 flax canvas, unpainted.
1						No. 4 flax canvas, unpainted.
						One for each chest; No. 5 cotton canvas, painted.
1		1		1	1	No. 6 cotton canvas, oiled.
						No. 6 cotton canvas, unpainted.
						One for each windsail; No. 6 cotton canvas.
						A set for one side only.
1		1	1	1	1	
1	1	2	1	1	1	
1		1	1	1	1	
1		2	1	1	1	
6	2	8	2	6	6	
						No. 10 cotton canvas; spare set for crew.
1	1	1	1	1	1	To be 3½ by 6 feet; of hammock canvas.
½		1		1	½	
1		1	1			No. 4 cotton canvas, painted black.
						Of No. 4 cotton canvas, oiled; for all hatches having frames or canopies.
5	2	6	2	2	2	
5	2	6	2	2	2	
1		2				
1	1	1	1	1	1	Wire-woven, 100 feet long.
100	10	125	10	20	10	Assorted—Nos. 14, 15, 16, and 17.





## SAILMAKER'S DEPARTMENT—Continued.

	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
MISCELLANEOUS.	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipisc.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.
Needles, 4-thread.....	15		25	20	20	20	15
Needles, 6-thread.....	15		20	15	15	15	8
Needles, 8-thread.....	5		15	10	10	10	5
Palms, roping, mounted.....	10		10	8	8	8	7
Palms, seaming, mounted.....	10	10	20	16	16	16	14
Prickers, sail.....	8	8	8	8	6	6	5
Rope, bolt, 1-inch..... fathoms	40	20	46	40	40	40	30
Rope, bolt, 1½-inch..... do	30		50	46	46	40	30
Rope, bolt, 2-inch..... do	36		38	36	36	35	25
Rope, bolt, 2¼-inch..... do	18		19	18	18	17	17
Rope, bolt, 2½-inch..... do	40	20	75	45	70	70	65
Rope, bolt, 2¾-inch..... do	40	25	35	35	30	30	28
Rope, bolt, 3-inch..... do	10		12	10	10	10	10
Rope, bolt, 3¼-inch..... do	18		19	18	18	17	17
Rope, bolt, 4-inch..... do						15	
Rope, bolt, 4¼-inch..... do	24		24	24	24		
Rope, bolt, 4½-inch..... do	16		16	16	16		16
Rope, bolt, 4¾-inch..... do							
Rope, bolt, 5-inch..... do						20	
Rope, bolt, 5¼-inch..... do	20		20	20	18		
Rope, bolt, 5½-inch..... do	20		20	20			
Rope, bolt, 5¾-inch..... do							
Rope, manila, 1½-inch..... do	25		50	25	45	45	46
Rope, manila, 1¾-inch..... do	45		50	45	45	45	20
Rope, manila, 2-inch..... do	40	40	75	75	75		
Rules, two-foot..... each	1	1	1	1	1	1	1
Sails, smoke.....	1	1	1	1	1	1	1
Sails, wind (complete).....							
Scales, Gunter.....	1	1	1	1	1	1	1
Shears, 10-inch.....	1	1	1	1	1	1	1
Squares, brass.....	1	1	1	1	1	1	1
Screens, gang-way ladder.....							
Screens, ladder.....							
Screens, top-gallant-forecastle.....							



## SAILMAKER'S DEPARTMENT—Continued.

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMER	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yantic, Petrel, and Class.	Fortune, Leyden, Mayflower, Nina, Falos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Tallapoosa, Michigan.	Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.	Ajax, Camanche, Catskill, Canonicus, Jason, Lehigh, Mahopac, Manhattan, Montank, Nahant, Nantucket, Passaic, Wyandotte.	
1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	
15	5	15	6	6	6	
8	2	8	3	2	2	
5	2	10	2	2	2	
7	2	8	2	2	2	Best steel plate.
14	4	16	4	4	4	Best steel plate.
5	2	7	2	2	2	
35	10	40	20	30	20	
35	10	46	35	30	20	
30	10	36	25	30	25	
15	10	18	13	15	13	
65		75	55	40	40	
28		35				
8		10				
15		18				
		15				
24						
		20				
		20				
40	10	45	10			For reef-points.
35		45				For reef-points.
						For reef-points.
1	1	1	1	1	1	
	1	1	1			No. 4 flax canvas, unpainted.
						One for each hatch, cabin, and ward-room sky-light.
1	1	1	1	1	1	
1	1	1	1	1	1	
1	1	1	1	1	1	Marked inches and eighths.
						One for each ladder on starboard side, of No. 6 cotton canvas, unpainted.
						For cabin and ward-room hatches only ; No. 6 cotton canvas, unpainted.
						No. 7 flax canvas, unpainted, when required.

## SAILMAKER'S DEPARTMENT—Continued.

MISCELLANEOUS.	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osage, Quinebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipsic.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	1 year.
Screens, galley.....							
Screens, head.....							
Slings, channel.....	2	2	2	2	2	2	2
Tallow..... pounds.....	10	10	10	8	8	8	6
Tarpaulins, hatch.....							
Tarpaulins.....							
Twine, cotton..... pounds.....	40	40	40	40	40	30	30
Twine, flax..... do.....	18	18	18	16	16	14	14
Yard-sticks.....	2	2	2	2	2	2	2

## SAILMAKER'S DEPARTMENT—Continued.

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yantic, Petrel, and Class.	Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.	Ajax, Camanche, Catskill, Canonicus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
1 year.	1 year.	1 year.	1 year.	1 year.	1 year.	
						When galley is under the break of top-gallant fore-castle, No. 8 flax canvas, unpainted.
						One set, No. 4 cotton canvas, when required.
2		2	2	2	2	No. 1 flax canvas, three thicknesses, unpainted.
6	3	8	3	3	3	
						One for each spar and gun-deck hatch, fore and main holds, and, when needed, for other lower-deck hatches.
						Two each for paymaster's yeoman and ship's cook.
30	4	30	6	10	8	Cotton twine, to be used for stitching and roping.
12	1	14	2	6	4	Flax twine, for whipping and marling.
2	1	2	1	1	1	

## TESTS FOR FLAX CANVAS.

Flax canvas to be 20 inches wide, and each bolt to contain 80 running yards. The blue thread in Nos. 1, 2, 3, and 4 to be  $1\frac{5}{8}$  inches from the selvage; in Nos. 5, 6, and 7, to be  $1\frac{3}{8}$  inches; in Nos. 8 and 9, 1 inch from selvage. The warp and filling to be spun exclusively of long, well-dressed, water-rolled flax, of the best quality, without any mixture of shorts or tow; the yarns evenly spun and of proper fineness; the warp to be rather more twisted than the filling. The warp and filling from Nos. 1 to 4, inclusive, to be double thread; Nos. 5 and 6, double warp and single filling; Nos. 7, 8, and 9, single warp and filling. No description of weaver's dressing, or any pressing or beating to be used in the manufacture. In testing, three strips crosswise and three strips lengthwise will be cut  $1\frac{1}{2}$  inches wide and 20 inches long, except in Nos. 8 and 9, which will be cut 2 inches wide and 20 inches long. The strips from 1 to 7, inclusive, must be raveled to 1 inch wide; 8 and 9, to  $1\frac{1}{2}$  inches wide, care being taken while raveling the strips for testing that the excess of thread in determining the width of the strip shall be given the strip being tested.

CANVAS.	Weight per bolt.	Weight to be borne by strips.	
	Pounds avoirdupois.	Crosswise.	Lengthwise.
		<i>Pounds.</i>	<i>Pounds.</i>
Flax canvas, No. 1 .....	84	470	316
Flax canvas, No. 2 .....	76	420	280
Flax canvas, No. 3 .....	70	370	250
Flax canvas, No. 4 .....	64	340	230
Flax canvas, No. 5 .....	58	320	216
Flax canvas, No. 6 .....	52	300	200
Flax canvas, No. 7 .....	46	280	193
Flax canvas, No. 8 .....	40	300	200
Flax canvas, No. 9 .....	34	280	193

## TESTS FOR COTTON CANVAS.

Cotton canvas to be 22 inches wide, and to contain 80 running yards to the bolt. In Nos. 1, 2, and 3 the blue thread must be  $1\frac{1}{2}$  inches from the selvage; in Nos. 4, 5, and 6,  $1\frac{1}{4}$  inches; in Nos. 7 and 8, 1 inch; in Nos. 9 and 10,  $\frac{3}{4}$  inch; in cotton ravens,  $\frac{5}{8}$  inch from the selvage. The filling should be stronger than the warp in all numbers. In testing, three strips crosswise and three strips lengthwise will be cut  $1\frac{1}{2}$  inches wide and 20 inches long, except in Nos. 8, 9, and 10, which will be cut 2 inches wide and 20 inches long. The strips from 1 to 7, inclusive, must be raveled to 1 inch wide; from 8 to 10, inclusive, to  $1\frac{1}{2}$  inches wide, care being taken while raveling the strips for testing that the excess of thread in determining the width of the strip shall be given the strip being tested. All ravens should have 35 running yards to the bolt,  $28\frac{1}{2}$  inches wide. The strips for testing to be cut the same width and length as Nos. 8 and 9 cotton canvas.

CANVAS.	Weight per bolt.	Weight to be borne by strips.	
	Pounds avoirdupois.	Crosswise.	Lengthwise.
		<i>Pounds.</i>	<i>Pounds.</i>
Cotton canvas, No. 1 .....	90	280	250
Cotton canvas, No. 2 .....	85	260	230
Cotton canvas, No. 3 .....	80	240	210
Cotton canvas, No. 4 .....	75	230	200
Cotton canvas, No. 5 .....	70	220	190
Cotton canvas, No. 6 .....	65	210	180
Cotton canvas, No. 7 .....	60	200	170
Cotton canvas, No. 8 .....	55	220	190
Cotton canvas, No. 9 .....	50	210	180
Cotton canvas, No. 10 .....	45	200	170
Heavy cotton ravens .....	* 27	140	118
Light cotton ravens .....	† 22	90	84

\* = 10-ounce duck.

† = 12-ounce duck.

## TESTS FOR HAMMOCK, BAG, AND COT DUCK.

The hammock and bag canvas to be 42 inches wide; the cot canvas to be 30 inches wide, and each bolt to contain 100 running yards. The blue thread to be  $1\frac{1}{4}$  inches from the selvage in the hammock canvas, 1 inch in the bag canvas, and  $\frac{5}{8}$  inch from the selvage in the cot canvas. In testing, three strips crosswise and three strips lengthwise will be cut  $1\frac{1}{2}$  inches wide and 20 inches long in the hammock and bag, and 2 inches wide and 20 inches long in the cot canvas. The strips in the hammock and bag canvas to be raveled to 1 inch wide; the strips in the cot canvas to  $1\frac{1}{2}$  inches wide, care being taken while raveling the strips for testing that the excess of thread in determining the width of the strip shall be given to the strip being tested.

CANVAS.	Weight per bolt.	Weight to be borne by strips.	
	Pounds.	Crosswise.	Lengthwise.
		<i>Pounds.</i>	<i>Pounds.</i>
Hammock duck = 1 .....	215	280	250
Bag duck = 4 .....	179	230	200
Cot duck = 8 .....	100	220	190

Cabin cots to be cut 6 feet 2 inches long and 40 inches wide. All other cots to be cut 6 feet 2 inches long and 30 inches wide. Bottoms of all cots will be made of bag duck.

All canvas to be marked and distinguished as required by act of Congress approved July 17, 1862,



## BOAT OUTFITS AND STORES.

*Boatswain's, Sailmaker's, and Carpenter's departments.*

DEPARTMENT.	ARTICLES.	Steam-launches or steam-cutters.	Sailing-launches and 1st cutters.	All other cutters.	Gigs and whale- boats.	REMARKS.
BOATSWAIN'S	Anchors.....each.....	1	1	1	1	See page 12.
	Anchor chains or ropes.....do.....	1	1	1	1	See pages 13 and 14.
	Hand-grapnels.....do.....	1	1	1	1	} Fitted with 1 fathom of light chain and 5 fathoms of line.
	Hand-grapnel lines.....do.....	1	1	1	1	
	Painters.....do.....	1	1	1	1	
	Marline-spikes.....do.....	1	1	1	1	
	Spun-yarn.....balls.....	1	1	1	1	Two-yarn.
	Tallow.....pounds.....	1	1	1	1	
	Thrum-mats for oars.....sets.....		1	1	1	
	Trailing-lines.....do.....		1	1	1	9-thread hemp.
	Fishing-lines.....each.....	3	3	3	2	
	Fishing-hooks.....do.....	12	12	12	12	Assorted sizes.
	Grommets.....set.....	1	1			
	Lanyards for thole-pins.....do.....	1	1			6-thread hemp.
CARPENTER'S	Boat-stoves in packing-boxes.....each.....	1	1			1st cutters of three first classes only allowed stoves; boats without stoves allowed one stew-jan each.
	Boat-stove cooking-utensils.....set.....	1	1			
	Safety-matches.....boxes.....	1	1	1	1	
	Fenders, leather, with lanyards.....set.....	1		1	1	
	Fenders, rope, with lanyards.....do.....		1			
	Fenders, pudding.....	1				
	Fuel.....					As required.
	Awnings.....each.....		1	1	1	Nos. 9 and 10 cotton canvas.
	Awning-bags.....do.....		1	1	1	Of No. 6 cotton canvas, painted lead-color.
	Arm-curtains.....set.....					One for each boat.
SAILMAKER'S	Boat-covers.....each.....			1	1	Nos. 7 and 8 cotton, for boats at davits only.
	Cushions.....set.....					One set allowed each barge and gig, and two sets for running boats, of heavy cotton ravens, upper side of enameled cloth, stuffed with hair.
	Cushion-covers.....do.....					Of heavy sheeting. Two for each set of cushions.
	Cushion-bags.....each.....	1	1	1	1	Of No. 6 cotton canvas, painted lead-color.
	Canopies.....	1				Of No. 5 cotton canvas, unpainted. Weather- cloths of canvas allowed each steam-launch and cutter.
	Sails.....suff.....	1	1	1	1	Launches and 1st cutters of heavy cotton ravens; other boats, light cotton ravens.
	Sail-covers.....set.....		1	1	1	Nos. 7 and 8 cotton canvas.
	Tarpanlins.....	1	1	1	1	

## STATIONERY.

*Allowances for Equipment Officers.*

ARTICLES.	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Iroquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipisc.	Yorktown, Concord, Warrington, No. 9, No. 10, No. 11, and Class.
	3 years.	3 years.	3 years.	3 years.	3 years.	3 years.	3 years.
Books, blank ----- 3-quire.	3	3	3	3	3	3	2
Books, watch and station ----- 1-quire.	3	3	3	3	3	3	2
Books, memorandum ----- number.	12	12	12	12	12	9	9
Blank surveys -----	75	75	75	75	75	75	75
Blank quarterly coal reports -----	36	36	36	36	36	36	36
Black ink ----- pints.	6	6	6	6	5	5	4
Envelopes, official ----- packages.	6	6	6	6	6	6	6
Envelopes, letter ----- do.	6	6	6	6	6	6	6
Eyes, metallic ----- boxes.	3	3	3	3	3	3	3
Gum-elastic loops ----- dozen.	6	6	6	6	6	6	6
India rubber ----- pieces.	6	6	6	6	6	6	6
Inkstands, heavy glass ----- number.	2	2	2	2	2	2	2
Memorandum-pads ----- do.	6	6	6	6	6	6	6
Mucilage ----- half pints.	3	3	3	3	3	3	3
Paper, drawing ----- sheets.	9	9	9	9	9	9	9
Paper, blotting ----- do.	24	24	24	24	24	24	24
Paper, foolscap ----- reams.	2	2	2	2	2	2	2
Paper, letter ----- do.	1	1	1	1	1	1	1
Paper, note ----- do.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Paper, regulation ----- do.	1	1	1	1	1	1	1
Pens, steel ----- gross.	2	2	2	2	2	2	2
Pen-holders ----- dozen.	2	2	2	2	2	2	2
Pencils, black lead ----- do.	3	3	3	3	3	3	3
Pencils, red and blue, assorted ----- number.	6	6	6	6	6	6	6
Red ink ----- vials.	2	2	2	2	2	2	2
Rulers, flat ----- number.	2	2	2	2	2	2	2
Tape ----- pieces.	6	6	6	6	6	6	6

## STATIONERY.

*Allowances for Equipment Officers.*

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yantic, Petrel, and Class.	Fortune, Leyden, Mayflower, Nina, Palos, Pinta, Speedwell, Standish, Triana, Intrepid, Alarm, Despatch, Vesuvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amphitrite, Dictator, Miantonomoh, Monadnock, Puritan, Roanoke, Terror, Maine, Texas.	Ajax, Cananche, Catskill, Canonieus, Jason, Lehigh, Mahopac, Manhattan, Montauk, Nahant, Nantucket, Passaic, Wyandotte.	
3 years.	3 years.	3 years.	3 years.	3 years.	3 years.	
2		2	1	3	2	The allowances of this table are for three years; if a vessel is commissioned for a less time, the allowances will be reduced proportionately.
2		2	1	3	2	
8	4	9	6	12	9	
75	18	75	18	45	45	
36	36		36	36	36	
4	2	5	4	5	4	
6	2	6	6	6	6	
6	2	6	6	6	6	
3	1	3	3	3	3	
6	3	6	6	6	6	
6	3	6	6	6	6	Two sizes.
2	1	2	2	2	2	
6	3	6	6	6	6	
3	1	3	3	3	3	
9			6			
24	12	24	12	24	24	
2	$\frac{1}{2}$	2	2	2	2	
1	$\frac{1}{2}$	1	1	1	1	
$\frac{1}{2}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
1	$\frac{1}{2}$	1	1	1	1	
2	1	2	2	2	2	
2	1	2	2	2	2	
3	1	3	3	3	3	
6		6	6	6	6	
2	1	2	2	2	2	
2	1	2	2	2	2	
6		6	6	6	6	

## STATIONERY—Continued.

*Allowances for ship's yeomen.*

ARTICLES.	FIRST CLASS.	SECOND CLASS.	THIRD CLASS.	FOURTH CLASS.	FIFTH CLASS.	SIXTH CLASS.	SEVENTH CLASS.
	Chicago, Philadelphia, Newark, San Francisco, and Class.	Baltimore, Charleston.	Brooklyn, Hartford, Lancaster, Pensacola, Richmond.	Boston, Atlanta, No. 7, No. 8, and Class.	Galena, Juniata, Marion, Mohican, Osage, Quinnebaug, Swatara, Omaha.	Troquois, Kearsarge, Adams, Alliance, Essex, Enterprise, Nipic.	Yorktown, Concord, Bennington, No. 9, No. 10, No. 11, and Class.
	3 years.	3 years.	3 years.	3 years.	3 years.	3 years.	3 years.
Books, blank ..... 3-quire	3	3	3	3	3	3	3
Books, blank (requisitions for daily expenditures).....	2	2	2	2	2	2	2
Books, memorandum (small).....	6	6	6	6	6	6	6
Gum-elastic loops ..... dozen	6	6	6	6	6	6	6
India rubber..... pieces	6	6	6	6	6	6	6
Inkstands, heavy glass ..... number	2	2	2	2	2	2	2
Ink, black..... pints	6	6	6	6	6	6	6
Ink, red..... vials	1	1	1	1	1	1	1
Mucilago ..... half pints	4	4	4	4	4	4	4
Paper, drawing (double elephant) ..... sheets	12	12	12	12	12	12	12
Paper, blotting..... sheets	12	12	12	12	12	12	12
Paper, foolscap ..... reams	2	2	2	2	2	2	2
Paper envelopes, official..... packages	12	12	12	12	12	12	12
Paints, water-color..... boxes	1	1	1	1	1	1	1
Pens, steel ..... gross	2	2	2	2	2	2	2
Pen-holders, ordinary..... dozen	2	2	2	2	2	2	2
Pencils, black lead ..... do	3	3	3	3	3	3	3
Rulers, flat, gutta-percha.....		2	2	2	2	2	2
Slates, porcelain.....	1	1	1	1	1	1	1
Tapo ..... pieces	12	12	12	12	12	12	12
Scales, Fairbank's platform, 50 pounds.....		1	1	1	1	1	1

## STATIONERY—Continued.

*Allowances for ship's yeomen*

EIGHTH CLASS.	NINTH CLASS.	SAILING VESSELS.	PADDLE-WHEEL STEAMERS.	IRONCLADS.		REMARKS.
				FIRST CLASS.	SECOND CLASS.	
Alert, Ranger, Yautle, Petrel, and Class.	Fortune, Leydon, Mayflower, Nina, Palos, Plata, Speedwell, Standish, Triaca, Intrepid, Alarm, Despatch, Veenvius.	Constellation, Portsmouth, Jamestown.	Monocacy, Talapoosa, Michigan.	Amplifrite, Dictator, Miantonomoh, Monadnock, Puritan, Ronoke, Terror, Maine, Texas.	Ajax, Cumanche, Catskill, Canonicus, Jason, Lehigh, Mahopac, Manhattan, Montank, Niantic, Nantucket, Passaic, Wyandotte.	
3 years.	3 years.	3 years.	3 years.	3 years.	3 years.	
3	1	3	2	2	2	
2		2	1	2	2	
6	3	6	3	4	4	
6		6	6	6	6	
6	6	6	6	6	6	
2	1	2	2	2	2	
6	3	6	4	6	6	
1		1	1	1	1	
4	2	4	4	4	4	
12		12	12	12	12	
12	6	12	12	12	12	
2	1	2	2	2	2	One-third to be regulation paper.
12	6	12	12	12	12	To be of three sizes.
1		1	1	1	1	
2	1	2	2	2	2	
2	1	2	2	2	2	
3	1	3	3	3	3	
2	1	2	2	2	2	
1		1	1	1	1	
12		12	12	12	12	
1	1	1	1	1	1	



1. Mess and state-room furniture for commanding officers of fleets, squadrons, and vessels; state-room furniture for other officers; furniture for apartments of vessels, and mess and cooking-utensils will be supplied by the Bureau of Equipment and Recruiting, as specified in the annexed list.

2. These outfits of cabin and state-room furniture, china, etc., will be furnished only to cruising vessels. It is considered that the supply is sufficient for a cruise of three years, and no article shall be replaced or renewed at the expense of the Government during that period on any contingency whatever.

3. Articles of china, including state-room crockery, will be designated by a monogram in gold for commanding officers of squadrons, and by a monogram in blue for commanding officers of vessels. State-room crockery for other officers will not be marked. All plated ware will be marked with a monogram, U. S. N.

4. Each set of china, glass, and plated ware furnished to commanders-in-chief and commanders of vessels will be packed in suitable packing-cases, and marked with the distinguishing number of the set contained therein. Each article of the set will be also marked with the same number. In future each set will be known by its number. At the expiration of a three years' cruise each set will be returned to navy yard, New York, where it will be surveyed, the missing articles supplied, and the set made ready for re-issue.

5. All mattresses will be marked for the state-rooms for which they are intended, and with their weight, locality, and date of manufacture. Carpets are to be procured in strict accordance as to quality with the standard samples. The prices fixed are per running yard, including all expenses of making, laying, and furnishing lining, as well as loss in matching. Care is to be exercised to ascertain the actual number of running yards necessary to be used. No pattern is to be selected for apartments other than those of commanding officers of fleets or squadrons requiring more than three-fourths of a yard to match, and for these apartments the pattern is to be no longer than will compare with the size of the cabin. All carpets for cabins are to be fitted so as to be taken up with ease. The lining should be caught together with twine, and a cover of old canvas is to be furnished for each carpet.

6. Carpets must be taken up at sea. Carpets must be covered with canvas covers whenever any work is going on liable to soil or injure them.

7. Curtains for stern and side windows, except where such windows are fitted with Venetian blinds, are to be made in halves, without trimming; each half the full width of the stuff, and not exceeding  $1\frac{5}{8}$  yards in length, lined with "silesia," gathered to the necessary fullness at the top on stout tape, and to have rings every three inches to slide on rods of brass one-fourth inch in diameter, or on hooks under cornices when those are furnished by the Bureau of Construction and Repair; to "loop up" at the side, with loop of proper material, to curtain-hooks or knobs.

8. Table-covers of woolen cloth, one for each table in each cabin, and one for the ward-room, will be allowed. An additional one of cotton-felt cloth will be allowed for each commanding officer and each ward-room. One of Turkey-red will be allowed for steerage and warrant officers, not exceeding two yards in length. The price to cover trimming.

9. Rugs, two for each cabin, and one for each stateroom in ward-room and steerage country, will be allowed.



*Allowances of mess and state-room furniture.*

ARTICLES.	Commanders of squadrons.	Commanders of vessels.
	No.	No.
PLATED WARE.		
Waitors.....	1	1
Sugar-bowls.....	2	2
Cream-pitchers.....	1	1
Casters (small, 4 bottles).....	1	1
Butter-dishes.....	2	2
Baking-dishes (round).....	2	1
Baking-dishes (oval).....	2	1
Vegetable-dishes.....	2	2
Fruit-stands.....	1	1
Ice-pitchers.....	1	1
Spoons, table.....	12	12
Spoons, gravy.....	1	1
Spoons, salt.....	4	4
Spoons, mustard.....	1	1
Spoons, dessert.....	12	12
Spoons, coffee, small.....	12	12
Spoons, tea.....	12	12
Spoons, sugar.....	2	2
Forks, table.....	18	12
Forks, dessert.....	18	12
Forks, oyster.....	18	12
Ladles, gravy.....	2	2
Ladles, soup.....	1	1
Sugar-tongs.....	2	2
Fish-slices.....	1	1
Butter-knives.....	2	2
Crumbscrapers.....	1	1
Nut-cracks.....	6	6
Nut-picks.....	12	12
Knives, carving.....	2	2
Knives, carving (small).....	2	2
Knives, table.....	12	12
Knives, table (small).....	12	12
Forks, pickle.....	2	2
Forks, carving.....	2	2
Tea-pots.....	1	1
Forks, carving (small).....	2	2
Coffee-pots (Biggin, 2 quarts).....	1	1

*Allowances of mess and state-room furniture—Continued.*

ARTICLES.	Commanders of squadrons.	Commanders of vessels.		
	No.	No.		
PLATED WARE—Continued.				
Soup-tureens, 4 quarts .....	1	1		
Baking-dish linings .....	2	2		
Cheese-scoops .....	1	1		
Steels .....	1	1		
CHINA-WARE.				
Sauce-boats and stands .....	2	2		
Gravy-boats and stands (covered) .....	2	2		
Salad-bowls .....	2	2		
Compotiers (large) .....	2	2		
Cups and saucers, breakfast .....	12	12		
Cups and saucers, tea .....	12	12		
Cups and saucers, after dinner .....	12	12		
Cups, egg .....	12	12		
Dishes, oval, meat, 18 inches .....	1	1		
Dishes, oval, meat, 16 inches .....	1	1		
Dishes, oval, meat, 14 inches .....	1	1		
Dishes, oval, meat, 12 inches .....	2	2		
Dishes, oval, meat, 10 inches .....	2	2		
Dishes, vegetable, sunken knob (round) .....	2	2		
Pitchers, 3 pints .....	2	2		
Plates, breakfast, 8 inches .....	18	18		
Plates, dinner, 9 inches .....	24	24		
Plates, soup, 9 inches .....	12	12		
Plates, dessert, 7 inches .....	12	12		
Plates, small, deep, 6 inches .....	12	12		
Plates, bread, 12 inches .....	2	2		
Plates, muffin and cover .....	2	2		
Plates, butter .....	12	12		
Fruit-baskets .....	2	2		
Well-dishes, 20 inches .....	1	1		
Well-dishes, 18 inches .....	1	1		
Ice-bowls .....	1	1		
Pickle-shells .....	4	2		
GLASS-WARE.				
Decanters, 1-quart .....	3	2		
Decanters, 1-pint .....	3	2		
Glasses, sherry .....	18	12		
Glasses, claret .....	18	12		

*Allowances of mess and state-room furniture—Continued.*

ARTICLES.	Commanders of squadrons.	Commanders of vessels.
	No.	No.
Glasses, champagne . . . . .	18	12
Glasses, Madeira . . . . .	18	12
GLASS-WARE—Continued.		
Glasses, finger . . . . .	18	12
Tumblers . . . . .	18	18
Salt-cellars (large) . . . . .	4	2
Preserve-dishes . . . . .	6	4
Celery-glasses . . . . .	2	2
Goblets, half pint . . . . .	18	12

## Allowance of mess and state-room furniture—Continued.

STATE-ROOM CROCKERY, ETC.	COMMANDER OF SQUADRON.		COMMANDER OF SINGLE VESSEL.		WARDROOM.		STEERAGE.		WARRANT OFFICERS.	
	No.		No.		No.		No.		No.	
Wash-stand basin, 16 inches.....	1		1		1		1		1	
Water-ewers, 1-gallon.....	1		1		1		1		1	
Brush-trays.....	1		1		1		1		1	
Soap-trays.....	1		1		1		1		1	
Foot-tubs (double tub).....	1		1		1		1		1	
Slop-jars (earthen).....	1		1		1		1		1	
Mattresses.....	1		1		1		*		1	
Pillows.....	1		1		1		*		1	
Mirrors.....	1		1		1		1			
Carpet for cabin.....	1		1							
Rugs for each state-room.....	1		1							
Oil-cloth, or linoleum.....					1					
Curtain material (bulkheads and ports)†.....										
Curtain material (doors)‡.....										
Table-covers (woolen).....	2		2		1		1		1	
Table-covers (cotton felt).....	1		1		1					
Candle-stands.....	1		1		1		2		1	
Candle-stands (swinging).....	1		1		1		2		1	
Dust-pans.....	2		2		2		2		2	
Dust-brushes.....	1		1		1		1		1	
Water-filters.....	1		1		1		1		1	
Looking-glass for each state-room and bath-room.....	1		1		1				1	
Cover for carpet.....	1		1							
Hand-bell for table.....	1		1							
Bolt-pulls.....	2		1							
Dish-covers, 18 inches.....	1		1		1					
Dish-covers, 16 inches.....	1		1		1					
Dish-covers, 12 inches.....	1		1		1		1		1	
Cuspidors.....	2		2		2		1		1	
Feather dusters.....	1		1		1					
Chamois skins.....	2		2		2		1		1	
Wine cloth.....	1		1		1					
Plate-powder..... packages.....	12		12		4		4			

\* Each bunk in steerage, one mattress and one pillow.

† Not allowed where there are Venetian blinds.

‡ Cost not to exceed \$2.50 per linear yard.

NOTE.—Wardroom and warrant officers' rooms, 1 set each; each steerage, 1 set.

Hereafter, in purchasing carpets or curtains in open market under the cognizance of this Bureau, the following prices per yard will be the maximum allowed:

Carpets, per yard, including making and laying, \$1.35.

Curtains, per yard, for doorways and ports, including making and fitting—

For commanders-in-chief .....	\$2.50.	Rugs..	\$8.00 each.
For commanding officers .....	2.25.	" ..	6.00 "
For other officers.....	2.00.	" ..	4.00 "
For bulkheads, or to cover lattice-work, air-ports, or bunks.....	1.75.		













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